The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

VOL. 24. NO. 44. TULSA, OKLAHOMA, MARCH 25, 1926

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Refinery Section Starts on Page 126

Production Gains in Several Areas

Highest daily average estimated production week ended May 30, 1925, 2,347,984 bbls. Lowest in 1925, January 3, 1,911,730 bbls.

Increase to Be Expected at This Season of Year. Benefit of Holding Prices Now Being Realized

By Andrew M. Rowley

Highest daily average estimated light oil production in 1925, week ended January 17, 1,525,220 bbls. Lowest in 1925, July 18, 1,374,173 bbls.

Activity being shown in many areas of the country again made itself felt during the past week in increased production, the North Central Texas territory alone showing an average daily gain of nearly 7,000 barrels. Lifting of proration in the Sunburst Field in Montana resulted in almost doubling the production of that field while a further increase was recorded in California where the higher prices are resulting in the opening of additional wells which have been shut in. Greater output of crude, however, should be expected at this season of the year and the present situation is not unusual. A glance at the graph below will show how closely production this year is following that of 1925 although the lines will start to diverge sharply within the next three weeks for there is no Smackover Field in sight now to cause the enormous increase registered last April and May.

Crude is still being withdrawn from storage in the Mid-Continent at the rate of approximately 200,000 barrels daily and shipments of crude and gasoline from California to eastern ports began to show a falling off last week, due probably to the higher prices there which automatically removed the differential existing between California products and those of the Mid-Continent and eastern fields. Consequently conditions affecting the industry continue exceptionally good. It is up to the industry to permit this status to remain. It must be remembered South America will wield a greater influence as time goes on, average shipments of about 32,000 barrels daily of crude from there during the week ending March 17 indicating what may be expected.

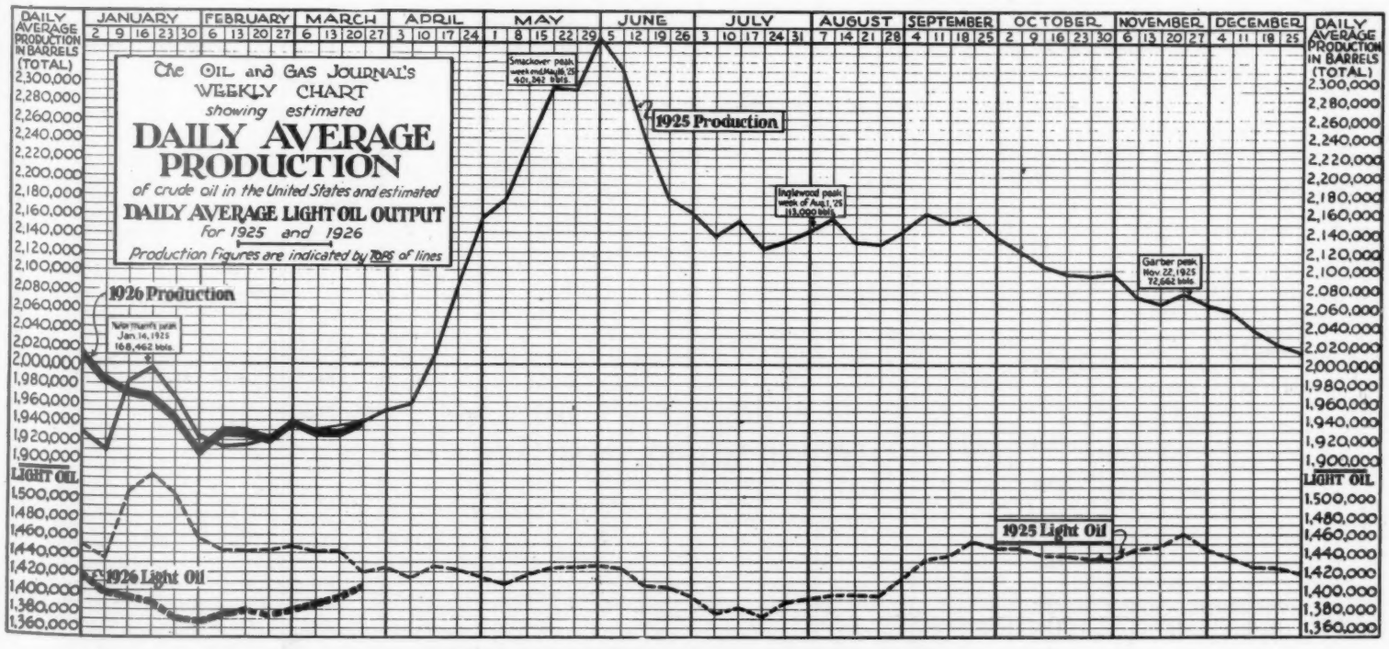
The great benefit to the entire industry of holding off crude price increases until basic conditions actually warrant rises is being shown at this time. In former years with advances announced early in the winter a slump usually was experienced in the early summer with a resulting lowering of prices of both crude and gasoline during the season of peak demand. If present prices are maintained as long as possible, there should be no reason for a reduction during the summer, the season of the year when all branches of the industry should benefit from greater consumption.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity crude oil in the United States for week ended March 20, and a comparison with the previous week follows:

	Mar. 20		Mar. 13	
	Light	Heavy	Light	Heavy
Oklahoma—				
Tonkawa	41,845	.....	43,160	.....
Burbank	43,830	.....	44,615	.....
Other Osage Fields	33,030	.....	33,065	.....
Cushing and Shamrock	22,420	.....	22,455	.....
Bristow and Eastern Bristow	31,445	.....	31,470	.....
Cromwell	18,535	.....	19,140	.....
Papoose	12,880	.....	13,235	.....
Garber	24,160	.....	23,030	.....
Blackwell-Braman	18,270	.....	16,570	.....
Davenport	21,635	.....	22,420	.....
Thomas	7,035	.....	7,290	.....
Northern Miscellaneous	109,440	.....	109,115	.....
Southern Fields	66,885	.....	67,230	.....
Total Oklahoma	451,410	.....	452,795	.....
North Louisiana	48,655	.....	48,670	.....
Arkansas—				
El Dorado and Calion	7,545	.....	7,640	.....
Smackover Light	18,505	.....	18,235	.....
Smackover Heavy	.....	133,190	.....	133,310
Miscellaneous	5,825	.....	5,005	.....
Total Arkansas	31,875	133,190	30,880	133,310
North Central Texas	170,290	.....	164,380	.....
Powell	31,750	.....	32,400	.....
Mexia, Currie, Richland, etc.	16,440	.....	16,620	.....
Wortham	10,740	.....	10,300	.....
Kansas	102,810	.....	103,420	.....
Total Mid-Continent Area	863,970	133,190	859,465	133,310
Gulf Coast	.....	96,405	.....	95,675
Southwest Texas	.....	39,810	.....	39,205
Eastern	98,325	.....	98,950	.....
Rocky Mountain Area	104,835	.....	99,615	.....
California—				
Santa Fe Springs	49,500	.....	49,000	.....
Long Beach	112,000	.....	112,000	.....
Huntington Beach	45,000	.....	45,000	.....
Torrance	5,000	23,000	5,000	23,000
Dominguez	21,000	.....	21,000	.....
Rosecrans	20,500	.....	20,500	.....
Inglewood	28,000	22,000	28,000	22,000
Remainder of State	60,000	220,000	58,000	220,000
Total California	341,000	265,000	338,500	265,000
Total United States	1,408,130	534,405	1,396,530	533,190
Grand Total		1,942,535		1,929,720

→ **Total Increase, 12,815 Bbls.; Light Oil Increase, 11,600 Bbls.** ←



WHAT AND WHERE TO BUY—PAGES 157-158-159

Oklahoma Gasoline Demand Improves

Better Tone Develops in Group 3 Refined Market After Export Purchase of Higher Gravities. Motor Fuel Prices Advanced. Heavier Oils Scarce

By Neil Williams

A better tone developed in the Oklahoma refinery gasoline market the past week. This, with an already strong fuel oil, gas oil and distillate situation, placed the entire Oklahoma (Group 3) refined market in a more favorable light than at any other time in the past several months. By Tuesday only lubricating oils and natural gasolines were uncertain, although kerosenes showed a tendency toward sluggishness.

The better tone at present is largely the result of purchases of aviation material by exporters Thursday, Friday and Saturday, but a noticeable increase in domestic inquiries for U. S. Motor gasoline Monday and Tuesday indicated that the market might receive additional support from this source in the immediate future.

Although the export purchases were not unusually large, only approximately 4,000,000 gallons of 64-66, 375 grade being placed in both Oklahoma and North Texas, nevertheless, they served to eliminate much distress material, restoring a firmness to higher gravities which was reflected to some extent in other gasolines.

A check of Tulsa refiners Monday and Tuesday also showed inquiries had been received from jobbers and marketers for between 100 and 150 cars of U. S. Motor gasoline. This was the first important domestic activity which had appeared since before the crude advances the first week in February.

Most of the inquiries for gasoline were for shipment over the first half of April but a few refiners reported some fair sized actual spot orders from jobbers. Refiners on the whole were hesitant to quote for future delivery but they were of the opinion that business might be taken on for the first 10 days of the month at a quarter cent above the spot market.

The increased inquiries for April gasoline also have been reflected in a noticeable tightening of material for immediate shipment and higher spot quotations. Practically all Oklahoma refiners by Tuesday had advanced quotations at least a quarter cent, and buyers who were able the middle of last week to obtain U. S. Motor gasoline as low as 9¼ cents, this week were finding it difficult to cover their needs under 10 cents.

Judging from the inquiries received by refiners Monday and Tuesday, the jobbers are in need of gasoline and figure the time ripe to fill their storage in anticipation of spring motor demand. A number of marketing companies also are known to have made several important long purchases the past week. The latter were taken as an indication that marketers believed prices would not go lower at this time and in all probability would be considerably higher during April.

With the turn in the market and with the outlook for April now favorable, refiners more than ever before are "watching their step" and are slow to make sales at low prices, which later in the month might react against the market. One of the causes of the extreme weakness of the market in February, it is remembered, was the fact that a number of marketers were able to sell gasoline, which they bought long before the crude advances, at prices considerably below refinery prices.

Refiners also are slow at quoting jobbers at low prices, fearing that the latter will fill their tanks now in a buying wave and then withdraw from the market again during the remainder of the spring. This is a situation which refiners have been trying to prevent because in many previous periods of good gasoline consumption jobbers have been able to keep out of the market because of heavy purchases at low prices, a policy which has proved disastrous to refinery markets.

With these factors in view, market observers point out that the trend of gasoline prices during April will depend almost entirely on a continuation of the buying which is expected in the next few days. If domestic demand holds steady during the early part of April, refiners in all probability will enjoy a steadily advancing market, but if sufficient buying does not materialize, marketers with material bought long at bargain prices may be forced to keep their quotations a notch under refinery prices in order to move their gasoline before the end of the month.

The domestic demand for gasoline at (Continued on Page 141)

REFINED MARKET BAROMETER

With an increasing demand for gasolines in the middle western and Mid-Continent states the outlook for refined markets of the country as a whole was brighter the past week than for a long time. Following the purchases by exporters of a substantial quantity of higher gravity gasolines and a large increase in inquiries for motor fuel prices were increased in those areas. Gasoline in eastern states, however, still was slow although the undertone was firm. Kerosenes generally were unchanged east of the Rocky Mountains although in parts of the Mid-Continent a let-up in the heavy demand of the past six weeks causes these products to appear sluggish. The California market gained strength. Gas oil, fuel oil, distillates and furnace oils were firm to strong with these products almost unobtainable in the Mid-Continent and middle western states because of the continued demand for cracking stock and industrial needs. Lubricants were generally unchanged with demand unfavorable in nearly all areas.

Mid-Continent—Gasoline develops stronger tone due to export purchases and domestic inquiries. Prices advanced in most areas. Kerosene slower and prices generally lower. Distillates, gas oil and fuel oils scarcer with strength spreading to lower grades. Natural gasolines unchanged. Lubricants still unsettled.

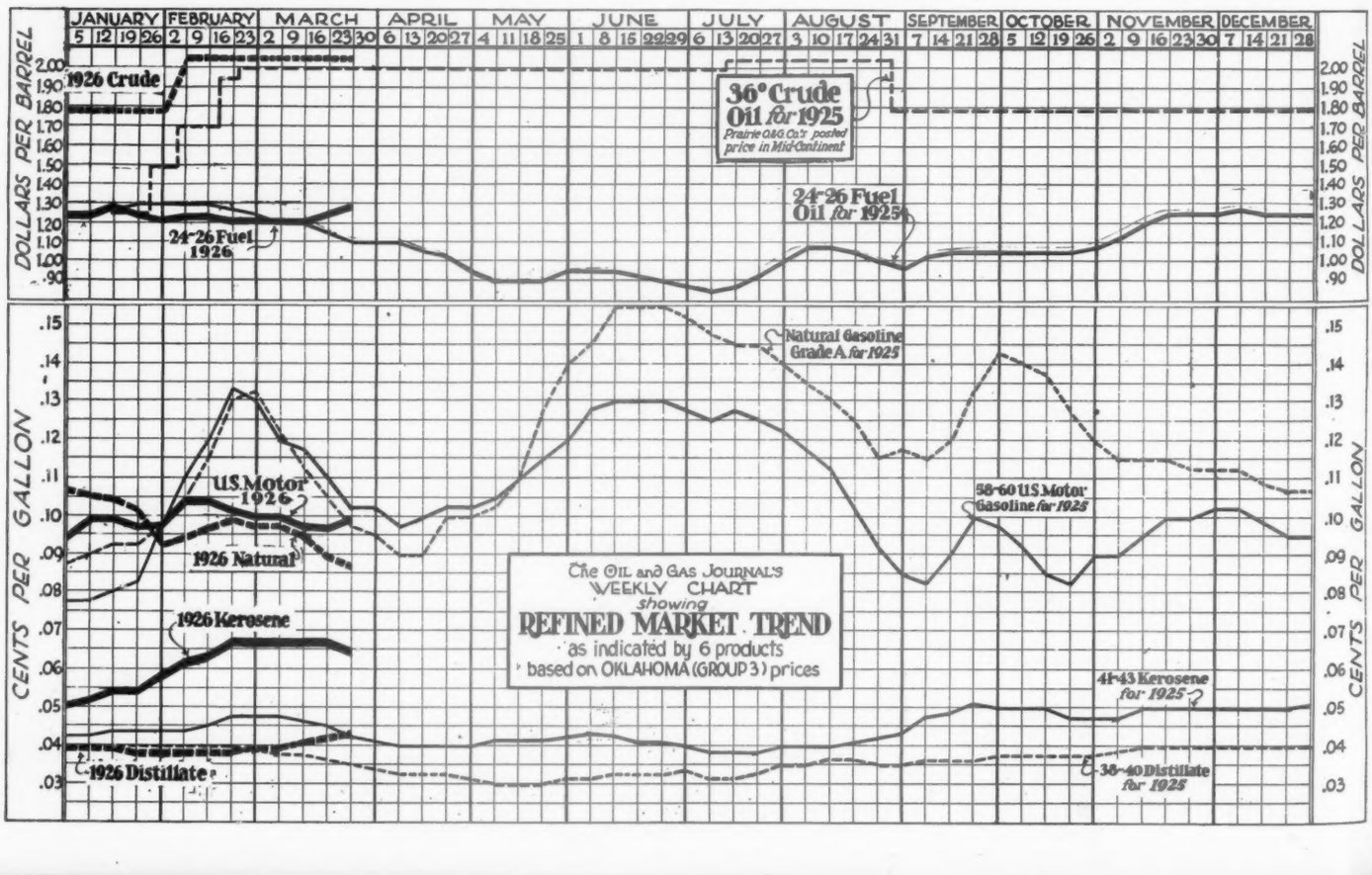
Atlantic Seaboard—Refined markets quiet but firm undertone apparent in gasolines. Kerosene unchanged with consumption holding up. Lubricants steady. Cylinder stock demand improved. Petrolatum weak.

Pennsylvania—Gasoline still weak. No improvement in demand. Kerosene fairly strong. Wax movement better. Neutrals brisk. Fuel oil demand fair.

California—Kerosene strengthens steadily and prices advanced. Shift in China from British product benefits California material. Engine distillate prices increased. Gasoline sales weaker.

Chicago—Gasoline prices up as orders increase. Kerosene firm but demand slower. Furnace oils still active. Gas oil, fuel oil stronger and almost unobtainable. Lubricants slow.

Gulf Coast—Slower lubricant movement reflected in reductions in few grades. Other products unchanged.



Petroleum Geologists to Meet at Dallas

Geophysical Exploration, Core Drilling, Microscopical Studies and Discussions of Origin of Oil Appear on Program

DALLAS, Tex., Mar. 20.—In preparing the program for the eleventh annual convention of the American Association of Petroleum Geologists here, March 25, 26 and 27, the program committee, of which R. B. Whitehead is chairman and Leon J. Pepperberg is secretary, has aimed to cover certain important subjects of vital interest to the petroleum industry today. The symposium on geophysical equipment should give every geologist a better knowledge of that equipment as applied to the oil producing business. Someone has said that within a few years every petroleum geologist must be more or less of a geophysicist to carry on the ever-increasing competition to find and develop oil fields. The microscope is coming to the aid of the oil industry as it has come to the aid of the steel industry and cement manufacturing interests. The study of micropaleontology is being placed on a firm basis. It will be the aim of this meeting to bring out some of the essential achievements and procedures which have been

E. DeGolyer
President A. A. P. G.

accomplished to date through the study of microscopic fossils.

Core drilling for structure is being done on a large scale. The type of equipment to be used in one locality may not be suitable for use in another. Types of equipment, costs and methods will be discussed in order that petroleum geologists may be familiar with these general subjects and thus aided in acquiring new and better subsurface facts.

The origin of oil has been the outstanding question of all times so far as petroleum geologists are concerned. A review and discussion of the old theories will bring out any new facts which have been found during the past few years.

The purpose and scope of this meeting, the committee says, is to cover those subjects which will be of vital interest to petroleum geologists and of practical value to oil operators. Between 1,000 and 1,500 are expected to attend the convention.

The list of papers to be read follows:

Origin of Oil

"The Origin of Oil in California Fields," By G. Clark Gester; "A Brief Outline of Some Oil Accumulation Problems," by A. W. McCoy; "Studies On the Origin of Oil," by E. A. Trager; "Notes on the Origin of Petroleum, Relation of Kerogen to Petroleum," by Prof. F. M. Van Tuyl; "Further Notes On the Effect of Compaction of Petroliferous Sediments," by F. M. Van Tuyl and R. C. Beckstrom; "Microthermal Studies," by Dr. David White; "Lithologic Character of Shale as an Index to the Degree of Metamorphism," by J. H. Wilson.

Core Drilling

"Diamond Drilling Near Kerens, Navarro County, Texas," by F. W. DeWolf; "Diamond Drills and Diamond Drill Equipment for Oil Structure Investigation," by R. D. Longyear; "Diamond Core Drilling in Oklahoma," by H. G. Officer (assisted by Glen C. Clark and Fritz Aurin); "An Experiment With a Drop Auger," by C. H. Row; "Modern Rotary Core Drilling Devices," by J. R. Suman; "Results of Diamond Core Drilling for Structure in Northeast Texas," by R. B. Whitehead; "Core Drilling for Structure in Venezuela," by S. H. Williston.

Microscopic Studies

"Common Species of Texas Caliborne Foraminifera," by Mrs. E. L. Applin and Miss L. L. Lane; "The Upson to Escondido Upper Cretaceous Section in Maverick County, Texas," by Karl E. Young; "Upper Cretaceous Foraminifera From Louisiana and Arkansas," by F. K. Bostick, C. D. Fletcher and A. L. Selig; "The Foraminifera of the Velasco Shale of the Tampico Embayment," by Joseph A. Cushman; 1. "Coral Reefs of the Oligocene of Texas," . "Some Foraminifera from the Oligocene of the Gulf Coast of Texas," by Miss Alva C. Ellisor; "Paper on Foraminifera of Lower Cretaceous of Northeast Texas," by J. Frost and E. B. Stiles; "Methods of Correlation by Means of Foraminifera," by J. J. Galloway; "Manual of Foraminifera," by J. J. Galloway; "Correlation Value of Micropaleontology in Sunset-Midway and Kern River Oil Fields Possibly Available," by P. P. Goudkoff; 1. "Notes on the Navarro Cretaceous and Midway Eocene Ostracoda of Texas," 2. "Notes on the Jackson Eocene and Vicksburg Oligocene Ostracoda from Louisiana and Mississippi," by Marcus A. Hanna and M. C. Israelsky; "Microscopic Investigations in California in Connection With the Petroleum Industry," by G. D. Hanna; "Revised Classification of the Claiborne in Louisiana on the Basis of Foraminiferal Studies," by H. V. Howe; "Microscopic Study of Sand Grains," by E. D. Luman; "Navarro-Midway Contact," by Mrs. F. B. Plummer; "Micropaleontological Studies of the Upper Cretaceous in Northeast Texas," by P. T. Seashore, S. Aronson, F. Frei and C. D. Fletcher; "Technique of Microfossil Studies," by E. A. Trager; "Generic Distinctions Among Orthophragmina, Numulties, Lapidocyclina, Miogypsina, Spiroclypeus and Cycloclypeus for the Field Geologist of the East Indies," by I. M. Van der Vlerk and R. E. Dickerson; "Pennsylvanian Microfossils of Southern Oklahoma," by J. A. Waters; "Checks on Micropaleontology by the Gross Fossils," by W. M. Winton; 1. "The Torsion Balance Schweydar-Bamberg," 2. "The Magnetic Vertical and Horizontal Field Balance," by Dr. C. A. Heiland; "The Seismograph," by Burton McCollum; 1. "Theory of the Eotvos Torsion Balance," 2. "Application of the Eotvos Torsion Balance," by Dr. George Steiner; "Results of Torsion Balance Work in the Powell Field, Navarro County, Texas," by R. B. Whitehead.

General Regional

"The Panhandle Oil and Gas Field," by C. Max Bauer; "Old Shore Lines As Related to Oil Accumulations," by E. B. Branson; "The Thomas Oil Field, Kay County, Oklahoma," by Stewart K. Clark; "Subsurface Stratigraphy of the Deep Horizons in the Garber Oil Field," by R. L. Clifton; "The Lytton Springs Field," by D. M. Collingwood and R. E. Rettger; "General Stratigraphy and

R. S. McFarland
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Structure of West Texas Basin" by F. C. Dodson; "The Claiborne Formation in Texas and its Relation to Salt Domes and Oil Pools," by E. T. Dumble; "The Westbrook Field," by E. C. Edwards and Leonard W. Orynski; "Texture and Alteration of the Edwards Lime of the Fault Zone Province of Central Texas," by M. A. Hanna; "The Evolution of Knowledge of the Permian Formations of the Greater Texas Regions," by R. T. Hill; "Producing Structures of the Mexia Fault Zone," by F. H. Lahee; "Quadrant Formations of Central Montana," by A. M. and Hammer Lloyd; "Areal Geological Maps of Oklahoma and Texas," by H. D. Miser; "The Eagle-Ford-Austin Chalk Transition Zone," by W. L. Moreman; "A Subsurface Study of Southeastern Butler County, Kansas," by L. Clark Morgan "Stratigraphy of the Southeastern Part of the San Juan Basin in New Mexico." by B. C. Renick; "The Woodbine Sand of Texas Interpreted As a Regressive Phenomenon," by Gayle Scott; "Notes on the Stratigraphy of the Upper Cretaceous of Texas," by L. W. Stephenson; "Some Features of Correlative Value in a Deep Well Section in Western Kansas," by A. W. Quinn; "Subsurface Distribution and Correlations of the Pre-Chattanooga (Wilcox

(Continued on Page 143)

SCOUTS ARRANGING ANNUAL CONVENTION

SAN ANTONIO, Tex., Mar. 22.—The National Oil Scouts Association of America will hold its second annual convention in San Antonio May 17 and 18, and the headquarters of the convention will be at the Gunter Hotel. The association was organized in Mineral Wells in 1924, and held its first annual convention in Fort Worth in June, 1925. In May, when it meets in San Antonio it will be two years old. During the past few weeks the membership has been increasing rapidly in south Texas due to the next convention coming here.

Preliminary to the big convention a few scouts of south Texas gathered at the Gunter Hotel in San Antonio recently to discuss the convention and arrange any necessary details not taken care of by the national officers. The picture herewith shows a number of them gathered on the roof of the Gunter Hotel.

Reading from left to right beginning with the front row they are: Frank B. Lefevre (independent); L. J. Snyder of Marland; William H. Spice of Marland; J. R. Bradshaw of Dixie and Ford Turner of Pure. Second row: J. V. Howe, of Tidal; E. R. Thomas (independent); E. A. Eason of Gulf; J. D. Prevo of Mid-Kansas, and E. H. Stickney of Stickney & Wheless. Third row: C. C. Miers of Republic; James Mendenhall, of Atlantic; Nat Wilson of Roxana; Val T. Billups, of Roxana, and V. T. Neuhaus of Neuhaus & Meek.

Top row: W. M. Wheless, of Gulf; Joe Dawson, of Gulf; E. Vern Woolsey, of Atlantic; H. M. Sample, of Marland, and Clint Murchison, of Murchison & Fain.

DOLLARS PER BARREL
CENTS PER GALLON

Big Treating Plant Saves Large Sums

More Than $2,000,000 in Good Oil Already Recovered By Humble's Installation in the Smackover, Ark., Field

By J. L. Dwyer

Throughout the years of its history, the petroleum industry has had very few operating problems presented to it which it has failed to solve. Regardless of the nature of the problem, whether it applied to refining, producing, or drilling, the ingenuity of the men in charge of that particular branch of the industry have always found a way out of the difficulty.

This spirit of progress has worked to such good advantage that the petroleum industry might well be compared to the packing industry, and the motto of the latter "Nothing lost but the squeal" could with slight variation be changed to apply to the oil business as "Nothing lost but the smell."

Increased efficiency has caused many innovations during the past 10 years, and more particularly during the past five years. There have been few changes in principle but the amazing number of refinements which have been added would confuse an oil field worker of the old regime were he to be placed in the midst of modern field equipment.

In the elimination of waste no greater example than the one pictured in this article could be found, for the cooking plant shown is said to be the largest field treating plant in the world. It is strictly a reclamation plant, and through its use over $2,000,000 worth of oil has already been recovered, with prospects of saving at least $5,000,000 additionally.

Pipe Line Requirements

In accepting oil from the producers, the pipe line companies allow a b.s. content of 2 per cent. When the oil shows a greater b.s. content than this figure, it is unfit for pipe line use, and must be treated to eliminate the objectionable matter.

There are various methods of rendering the oil suitable to the pipe line requirements. Chemicals, special preparations, cooking vats, and steam stills are all employed in reducing the amount of b.s. and in the Smackover Field with its vast storage of oil above the 2 per cent limit, the most popular method of treating oil is by cooking.

The plant pictured is the property of the Humble Oil & Refining Co., and is situated in the Louann district of the Smackover area in Arkansas. This company has a total of 2,000,000 bbls. of oil in storage which is unfit for pipe line use, and through the operation of this plant, it has already recovered 2,000,000 bbls. and through steam treatment has made it come within the 2 per cent classification.

During the past three months, the amount of non-pipe line oil has been greatly reduced in the Smackover Field. One of the causes of this is the Humble plant, which has been running as high as 30,000 bbls. daily through its system. In addition it must be remembered that there are dozens of smaller plants situated through the Smackover region.

The Humble plant is composed of earthen storage tanks with a capacity of several million barrels of crude, a battery of boilers, the necessary cooking vats and steam lines, and a series of stock tanks for receiving the good oil after the treatment has been completed.

A view of the Humble's plant. The sheds are built over the cooking vats. To the left are the boilers which furnish the steam, and the storage tanks are in the rear of the buildings.

Method of Operation

When the oil is run from the field, it is analyzed and the contents determined. The plant has the various grades of crude segregated according to the degree in which the oil is cut. The oil is graded in four classes, 10 per cent b.s. and under, 20 per cent b.s. and under, 50 per cent b.s. and under, and over 50 per cent b.s. In storage at present one finds Smackover crude having as high as 90 per cent b.s.

Naturally the recovery is in inverse ratio to the per cent b.s. of the crude. In treating the crude which has 90 per cent b.s., a recovery of 30 per cent good oil is considered splendid, and the residue after treatment has been made is allowed to accumulate in ponds which are subsequently burned. The good oil is run into stock tanks and later turned into the pipe line for transportation. In better crude, the percentage recovery is much higher and in the crude which contains 50 per cent b.s. the recovery is 40 per cent. In crude which is 20 per cent b.s. the recovery of good oil is approximately 60 per cent. In crude having a b.s. content of 10 per cent and under the good oil recovered is 80 per cent of the total.

At the time the pictures were taken, the plant was running 2,000 bbls. of crude over 50 per cent; 5,000 bbls. of crude under 50 per cent; 5,000 bbls. of crude under 20 per cent, and 10,000 bbls. of crude 10 per cent b.s. and under. This made a total daily run of 32,000 bbls., out of which 21,600 bbls. of pipe line oil was recovered.

The Cooking Vats

The detail photo shows the construction of the cooking vats. The crude is run from the ponds to the vats, and enters the upper chamber, which is called the preheater. The vat is composed of three distinct parts. The preheater, the heater, and the finisher. The vats are made of iron sheeting. The preheater is 18 inches high, and has a top of the same material, the other troughs have open tops. The vats are 40 feet long, and have steam coils running their entire length. The steam coils are made of 2-inch pipe, in the heater and finisher, and 1-inch pipe in the preheater. After the preheater has been filled with oil, the steam is turned on, and much of the water and b.s. is driven off by the application of steam. In the heater and finisher, the heat is intensified, and when the crude leaves the third vat, it is practically good oil.

After the process has been started it is continuous, and the plant runs 24 hours a day. The steam is furnished by a battery of ten 40-horsepower oil field boilers which are run at a low pressure, as volume rather than pressure is sought.

In the heater especially, the action of steam on the oil has a tendency to agitate the crude, and occasionally causes it to run over the top. The location is hardly a comfortable one, and the duties of the men in charge of the apparatus while not laborious, are not very pleasant.

As an auxiliary to the plant, there is a treating system of the HE Co. used. This system is not used continuously, but has been found very effective. Its only limit is capacity.

The Treating System

The HE treating system was designed by Harry Edwards, general superintendent of the Humble Oil Co. A picture is shown with this story. Surprisingly simple in construction, it handles the cut oil in a continuous operation. It consists of 50-foot joints of 10-inch casing placed parallel. Each of the joints has five 2-inch risers erected from the pipe to the crude pipe, at intervals of 10 feet. Inside of the casing five smaller pipes carry the oil, and around these pipes the steam is introduced. The steam has ample room to circulate around each of the smaller pipes independently of the other, and with the crude passing through the pipes, the application of steam does the work of boiling out the water and b.s. The general practice is to have four lines of 10-inch parallel, and to run the crude through all four lines before passing it to the stock tanks. The steam also has a continuous circuit through all four pipes before being permitted to escape into the air.

This system of treating oil is a decided contrast to the old systems of "steam stilling" oil in the field before it conformed to pipe line specifications. The old style methods of treating oil were steam still and sun curing. In using the sun curing method the oil was run into pits dug in the ground and then the curing of the oil was a matter of weather conditions. If the sun shone brightly and the heat rays did their part to dehydrate the oil, all well and good, but during the long cold winter months when the weather

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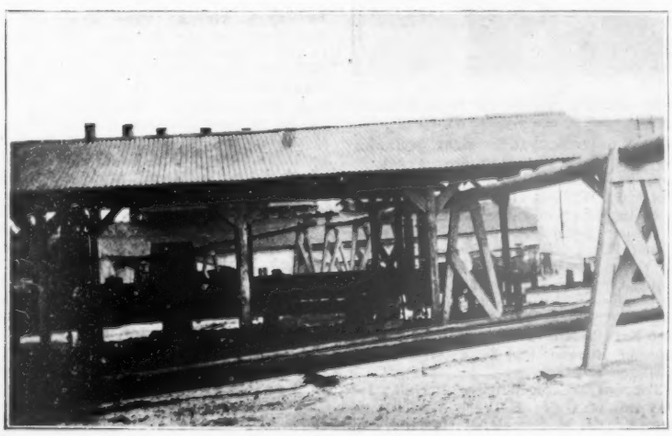
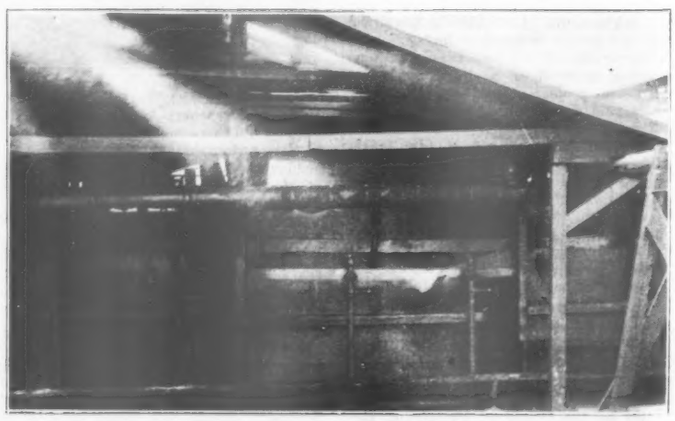


The "HE" treating unit.



The cooking vats in which the b.s. is boiled out of Smackover heavy oil.

Background of California's Advance

Analysis of West Coast Refining Clearly Shows Importance Pacific Slope's Oil Industry Attaches to Its Heavy Stocks

By Charles E. Bowles
Petroleum Analyst, The Oil and Gas Journal

If, during the past three years, the refineries of California had run crude oil of a quality comparing with that run in the Oklahoma-Kansas area—or even in the Texas Gulf Coast area—the situation, both in California and throughout the country, would have been chaotic.

The quality of the crude run by California refineries saved the situation, so far as gasoline was concerned—but made the situation extremely hard, so far as fuel oil was concerned.

And yet, out of all of it, California emerges triumphant—and on March 11 increased the price of crude oil and gasoline.

No other single thing that could have happened on the Pacific Coast could have more clearly revealed the attitude of both producers and refiners in that area toward their own particular problem.

In January, 1926, the average daily production of crude oil in California was 615,000 bbls.—and the average daily run of crude to stills was 530,000 bbls. This left a daily surplus of crude of only 85,000 bbls.

For the year 1925 the daily average production of crude was about 630,000 barrels—and the daily average run of crude to stills was 504,000 bbls. Thus, last year, there was an average surplus of crude production over crude run to stills of 126,000 bbls. a day.

And in 1924, the average daily production of crude was 623,000 bbls.—and of crude run to stills 408,000 bbls.—a daily surplus of 215,000 bbls.

Increase in Refining

During 1924 and 1925 crude production has remained about the same, while refinery runs have increased about 100,000 bbls. a day.

And during the same two years the "surplus" of crude production over refinery runs dropped from 215,000 bbls. to 126,000 bbls.

It is probable that in 1926 California crude production will not differ materially from the last two years. The bigger problem is what the average refinery runs will be for 1926.

As of January 1, 1926, the United States Bureau of Mines made the following estimate of refineries in California:

Status—	No.	Capacity
Operating	56	669,050
Shut down	28	46,850
Total	84	715,900

As the daily average production of crude in California in January was 615,000 bbls. and the capacity of the operating refineries 669,000 bbls. it is obvious that the capacity of the 56 operating refineries was 54,000 bbls. in excess of the daily production.

And as the daily average run of crude to stills in California in January was 530,000 bbls., there was an average daily "margin" of 85,000 bbls. of crude production that, for various reasons, did not run to stills.

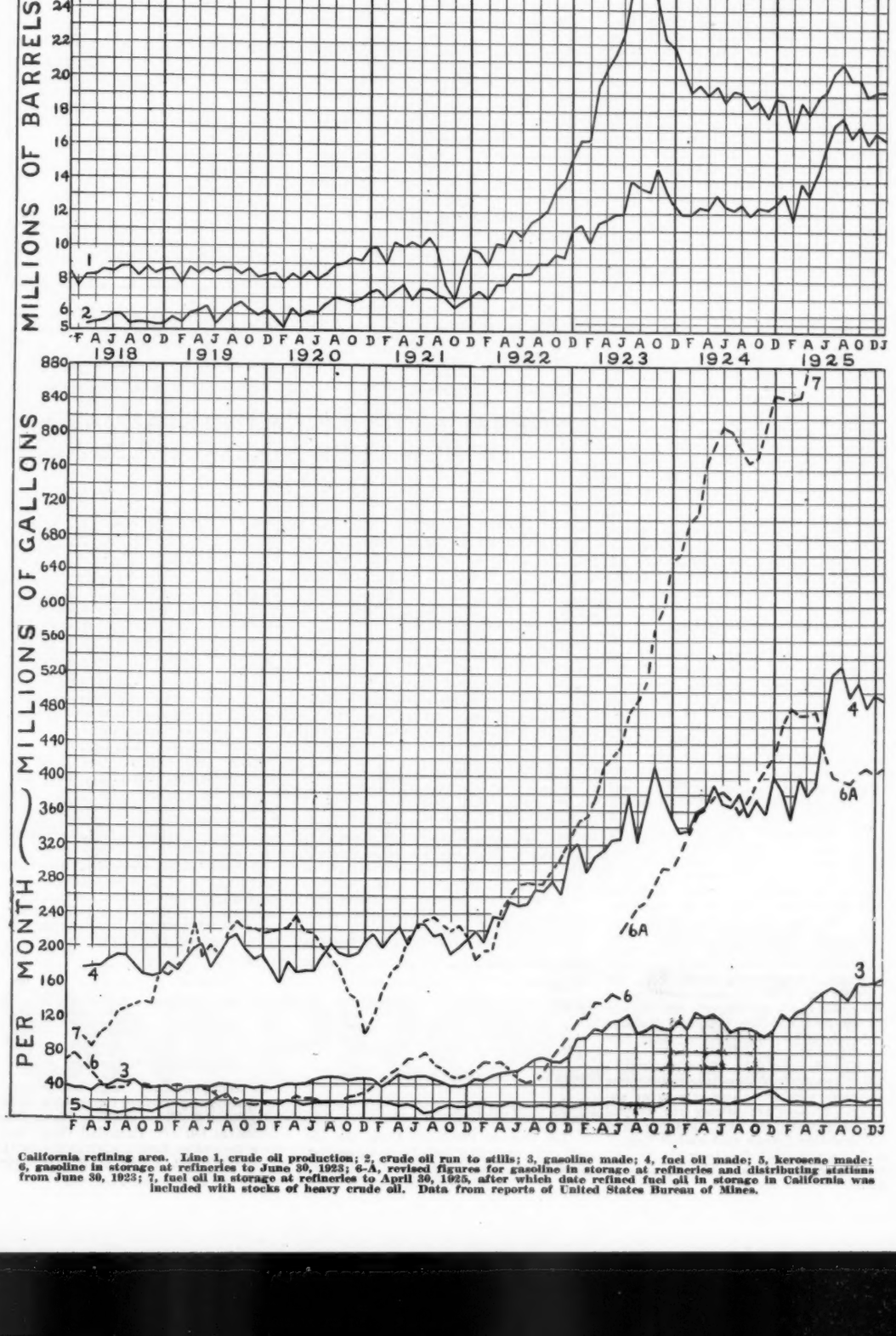
The accompanying graph gives an interesting sidelight on this margin of crude oil that is not reaching the stills, while the accompanying table of percentage recoveries indicates roughly the extent of the change in the quality of the crude run during the last three years. The yearly totals of the figures upon which Lines 1 and 2 of the large graph are based are as follows—all amounts are daily averages, and in barrels:

Year—	Crude Prod.	Crude Run to Stills	Daily Surplus
1918	267,000	182,000	85,000
1919	277,000	200,000	77,000
1920	282,000	210,000	72,000
1921	307,000	235,000	72,000
1922	379,000	282,000	97,000
1923	720,000	411,000	309,000
1924	623,000	408,000	215,000
1925	630,000	504,000	126,000
Jan., 1926	615,000	530,000	85,000

While it is obviously true that a great many things have changed since 1918—and that the California picture is essentially different from a few years ago—it is equally obvious that the production of heavy oil in California today is approximately the same as it was before the Los Angeles Basin fields were brought in. According to The Oil and Gas Journal's classification the production of heavy oil in California during the first half of March, 1926, averaged around 265,000 bbls. a day—and this is approximately the same as the total production of California prior to the bringing in of the light oil field in 1923.

During these preceding years there was

(Continued on Page 140)


MILLIONS OF BARRELS PER MONTH
MILLIONS OF GALLONS PER MONTH
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California refining area. Line 1, crude oil production; 2, crude oil run to stills; 3, gasoline made; 4, fuel oil made; 5, kerosene made; 6, gasoline in storage at refineries to June 30, 1923; 6-A, revised figures for gasoline in storage at refineries and distributing stations from June 30, 1923; 7, fuel oil in storage at refineries to April 30, 1925, after which date refined fuel oil in storage in California was included with stocks of heavy crude oil. Data from reports of United States Bureau of Mines.

Phillips Petroleum Co. the Big Buyer

Outbid All Other Large Companies for Choice Tracts in the Burbank Field at Osage Sale. Total of $3,998,485 in Bonuses at Two-Day Sale

By James McIntyre

A detailed list of tracts offered and sold and bonuses paid will be found starting on page 105.

The Phillips Petroleum Co., already one of the largest leaseholders and producers in the Burbank Field, in Osage County, Oklahoma, went into last Friday's sale of west side leases at Pawhuska with its officials fully determined that no other company was going to outbid them on tracts which the Phillips Petroleum Co. had decided it must have.

Other companies, like the Carter Oil Co., Gypsy Oil Co., Prairie Oil & Gas Co., and the Skelly Oil Co. knowing the determination of the Phillips Petroleum Co., went to the sale prepared to bid high on the outstanding tracts, which every one conceded were worth big money. The Phillips Petroleum Co. accomplished what it set out to do, but it cost the company $2,979,000 for seven quarter sections, aggregating 1,120 acres, or at the rate of about $2,660 per acre, and while this seems a very high figure, there were other companies in the field willing to pay almost as much for the same properties, competing with the Phillips company for each tract. The Phillips Petroleum Co. already had 14 160-acre leases of its own on the Osage County side of the field, and a partnership interest with the Skelly Oil Co. in 13 more, and with the Delmar Oil Co. in one lease. It has an enormous casinghead gasoline manufacturing business in the field and its desire to acquire new acreage was not only to have its oil producing properties conveniently grouped but to acquire additional casinghead gas for its gasoline plants. Every lease it bought in the Burbank area at this sale is believed by oil men generally to be a good one and while the prices paid for some were high by reason of the competition, none of the tracts sold at an unreasonable figure when compared with some of the prices paid at past sales.

The Phillips Petroleum Co. paid $710,000 and $625,000 respectively for tracts north and east of a lease of its own for which it paid the bargain price of $6,000 last year, which lease has proved a bonanza thus far.

Total Surprisingly High

Altogether the two day sale, held on Wednesday and Thursday, March 17 and 18, brought the Osage tribe of Indians $3,998,485 in bonuses, very much to the surprise of everyone, including intelligent Osages capable of appreciating values. The east side tracts, of which only 130 were sold on Wednesday, brought $258,600, while the 170 west side tracts sold Thursday brought $3,739,885, and of this amount 79 per cent was paid by the Phillips Petroleum Co. for seven Burbank tracts.

The minimum of $500 per tract fixed a few years ago when the industry began to go mad over Osage leases, was reduced at this sale to $300 and a large number of quarter sections, including four in Burbank, went at this small figure. The east side of the Osage aside from spots where there is some confidence in the possibility of Wilcox sand production, is no longer considered very desirable. The severe restrictions, the inability to block acreage that makes test work worth the hazard, and the age of the field and the immense drainage it has been subjected to for years, render it far less desirable than other parts of the Oklahoma field, where commercial leases are available, and about the same operators play it at one sale as at another. It does not attract the general run of lease buyers. On the other hand the west side is yet a vast wildcat "play," with the principal drawback the departmental restrictions and the inability to gather enough acreage to warrant the high cost of deep drilling, but even in the face of these, the west side of the Osage Nation looks good to many oil men. That it will show paying pools here and there before it is all tested is generally believed.

Wednesday's sale was a pretty dull affair and not until late Thursday, when the leases in the Fairfax area, south of the Burbank Field were put up, did real interest become manifest. The Fairfax tracts having been disposed of and none of them commanding large prices because of their location with reference to the pool recently opened by the Prairie Oil & Gas Co. in Section 21-25-6, the real show began when the Burbank tracts were sprung on the crowd.

Twenty Burbank tracts were sold. They brought $3,488,600 in the aggregate or an average of $1,090 per acre. The prices ranged from $300 up to $710,000. The following data will show what was bought and the record of the leases closest to it, which will give the reader a line on what the owners of the new tracts may expect of their purchases:

Sizing up the Neighbors

Tract 582, the northeast quarter of Section 3-27-5, was sold to The Texas Co. for $66,000. It is connected on the southeast with the same company's lease in the southwest quarter of Section 3, in Kay County, which had produced 579,558 bbls. of oil up to February 1, 1926, but it is east of a quarter section which has produced only 127,314 bbls. in two years, and just north of the Gypsy Oil Co's. $151,000 lease, the southeast quarter of Section 3, which has a record of 74,564 bbls. since May 1924.

The Skelly Oil Co. got Tract 581, the northwest quarter of Section 3-27-5, just east of Tract 582, for $68,000. The same company owns the south offset lease, southwest quarter of Section 2, which cost it $10,500, and which produced 24,591 bbls. from April 1925 to February 1926. Just east of Tract 582 is Tract 580, bought by the Phillips Petroleum Co. for $366,000. It is a north offset lease to the same company's surprisingly good lease, the southeast quarter of Section 2, for which the company paid $6,000 at last year's sale, and which has been showing wells of the gusher variety. The Phillips Petroleum Co. also bought the east offset lease, Tract 579, paying $625,000 for it. As was expected Tracts 580 and 579 brought the largest prices paid at the sale.

Tract 511, went to Oliphant & Peters for $8,600. It is the northeast quarter of Section 20-26-5. West of it is a $75,000 lease of the Phillips Petroleum Co., northwest quarter of Section 20, which had produced 76,797 bbls. from June 1924 to February 1926. Southwest of it is the Sinclair Oil & Gas Co's. $415,000 lease, southwest of Section 20, which produced 676,602 bbls. from March 1923 to February 1926, and south of it, the Phillips Petroleum Co's. $24,000 property which produced 122,555 bbls. from July 1924 to February 1926.

The Kewanee Oil Co. paid $300 each for Tracts 512, 513 and 514, which lie east and southeast of the town of Shidler. The Kewanee company already owned the southwest of Section 34-27-5, for which it paid $75,000 at a past sale, and it now has the whole of Section 34 at a total cost of $75,900 in bonus. Just west in Section 34, the Carter Oil Co's. $160,000 lease in the northeast quarter has produced only 5,813 bbls. in 3½ years, and the Mid-Kansas Oil & Gas Co's. $115,000 lease in the southeast quarter made 115,000 bbls. in the same length of time.

"In the Trend"

On the south fringe of Burbank four tracts were for sale, and all of them are regarded as good. These tracts were auctioned before the crowd had got thoroughly "warmed up", and did not perhaps bring as much money as they would have done had they been sold after the high priced pieces in the north end of the field. Tract 503 was knocked down to the Phillips Petroleum Co. for $526,000. The Carter Oil Co. which has a number of leases close to this tract forced the Phillips company to pay high. The Phillips Petroleum Co. also bought Tract 501, just west of No. 502 paying $110,000 for it. Tract 501 is south of a Carter Oil Co. $42,00 lease which produced 195,503 bbls from March 1925 to February 1926. Tract 502 is south of the Carter Oil Co. lease which cost $176,000 and had produced 485,415 bbls. from March 1925 to February 1926.

There is a theory that the Burbank field may narrow down to a streak that extends southward to the recent Prairie Oil & Gas Co. discovery in Section 21-25-6. This and the fact that the most southerly leases in the field thus far have been good producers made Tracts 501, 502 and 503 very desirable. The Lewis Oil Co. captured Tract 503, which lies south of the same company's $99,000 lease in the northeast quarter of Section 21-26-6 and which had produced 352,547 bbls. from March 1925 to February 1926. The Mid-Kansas Oil & Gas Co. bought Tract 504, northwest quarter of Section 22-26-6 which lies east of the Lewis Oil Co's. producing lease above mentioned and south of the Prairie Oil & Gas Co's. $25,000 lease in the southwest of Section 21-26-6, which has shown a yield of only 15,771 bbls. from May 1925 to February 1926.

(Continued on Page 129)

SUMMARY OF SALE

Wednesday, March 17	
Number of east side tracts offered	318
Number of acres offered	50,420.90
Number of tracts sold	131
Number of acres sold	20,500.90
Total bonus paid	$258,600
Average price per acre	$ 12.51
Thursday, March 18	
Number of west side tracts offered	417
Number of acres offered	52,971.14
Number of tracts sold	169
Number of acres sold	25,830.53
Total bonds paid	$3,739,885
Average price per acre	$ 144.78
Total of Both Days	
Grand total of tracts offered	735
Number of acres offered	103,392.04
Number of tracts sold	300
Number of acres sold.	46,331.43
Total bonus price paid	$3,998,485
Average price per acre	$ 86.30

GENERAL PETROLEUM AND STANDARD OF NEW YORK NEGOTIATE MERGER

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, 30 Church St., New York

NEW YORK, Mar. 23.—The tentative agreement for the consolidation of the Standard Oil Co. of New York and the General Petroleum Corp. has been signed. The final agreement will be signed here within a week or two.

Negotiations were under way for an exchange of stock of two shares of Standard of New York for one of General Petroleum Corp. On this basis Standard of New York would probably issue approximately 2,240,000 shares of its stock of $25 par value in exchange for the 1,120,000 shares of General Petroleum stock of the same par value. This would involve calling of a meeting of stockholders of the New York company for the purpose of increasing the authorized capital from the present figure of $235,000,000.

This exchange covers every share outstanding and not only a working control. The general policy and business relations of the General Petroleum Corp. will continue under the present executives and no changes in personnel are to be made. General Petroleum employes will participate in all Standard Co. death benefits and stock purchase plans, receiving credit for the entire period of service.

The General Petroleum Corp. has 750 oil wells including both those on and off production. Its daily potential production of crude is 34,000 bbls. The company has one refinery at Vernon, near Los Angeles, which is connected with pipe line from San Joaquin Valley and all southern California felds. Stocks on hand include about 2,000,000 bbls. of gasoline and a similar amount of tops. Crude and fuel oil stocks are about 10,000,000 bbls.. It has been expanding its retail market all along the Pacific Coast, particularly in the northwest. The company has undeveloped acreage at Ventura Avenue Field which can be drilled up if needed. The company has not been pushing production ahead but was marking time waiting for better times.

Mergers Increasing

Recent oil mergers, including the Standard-General Petroleum one, have involved eight large independent organizations, with aggregate capital of about $842,000,000, assets of $1,038,000,000 and refining capacity of about 393,500 bbls. daily.

Of these eight companies, five have been acquired or have been merged with Standard Oil units. These latter, having aggregate capitalization of $650,000,000, assets of $755,000,000 and refining capital of 296,000 bbls. daily, are as follows:

Company	Merged with	Capital	Assets	Rfg. cap. Bbls. Daily
Pacific Oil Co., S. O. of California		$175,000,000	$ 95,000,000	.....
General Petroleum, S. O. of New York		59,000,000	106,000,000	50,000
Pan American Petroleum S. O. of Indiana		150,000,000	195,000,000	*165,000
Magnolia Petroleum S. O of New York		197,000,000	213,000,000	50,000
Humble Oil Co. S. O. of New Jersey		69,000,000	146,000,000	31,000
		$650,000,000	$755,000,000	*296,000

In addition, three large independent organization have joined forces with other independents. These are Tide Water Oil, Associated Oil and Barnsdall Corp., the three companies having aggregate capital of $192,000,000, assets of $283,000,000

(Continued on Page 142)

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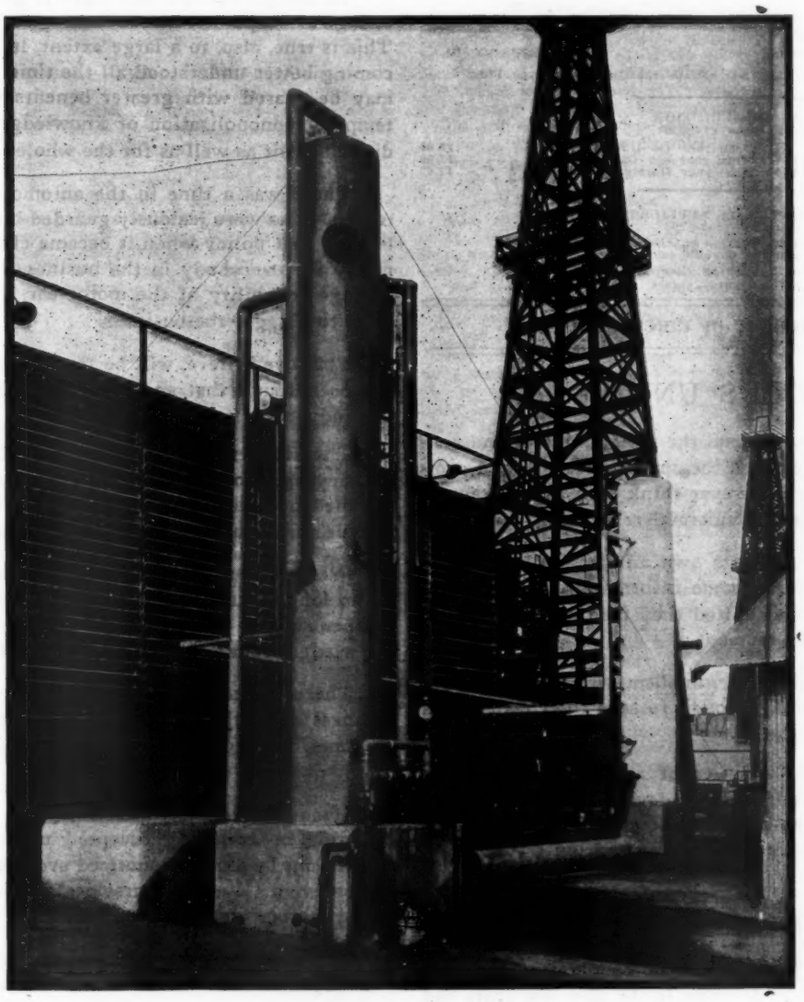

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E PLURIBUS UNUM

How many Americans who applaud the national motto and contrast the federal union of states with the chaotic rivalries and competition of our European neighbors ever think of it as an example for our everyday industrial and commercial relations?

Our 48 states, each busy with its own affairs and solving its own problems in its own way, welcome information and cooperation from each of the others and united they take counsel and act together on matters of common moment.

In Europe, where parochial individualism still runs rampant, they can hardly get together long enough to save their own civilization.

Industrial and commercial America of a generation ago was like that. Every man for himself and the devil take the hindmost. Competition was boosted as the life of trade and they were not always very particular about what sort of competition it was so it beat the other fellow.

The oil industry saw a survival of that sort of thing when "distress gasoline" broke the market of 1923 and 1924. It would have seen it again last year if the spirit of cooperation that has been making itself felt in modern business in the past few years had not averted it.

We do not know who started the first business lunch club or trade association but he deserves more than a monument from American business men. He launched the most important movement in the business world of today.

He got competitors together. They might still be rivals but at these gatherings they came to know one another as human beings, with the same ambitions—and the same problems. And when they realized this last they naturally began to talk them over and to compare notes.

They found they could share experiences and avoid pitfalls and later they could share ideas and be mutually benefited.

That has been the experience of trade associations everywhere and last year proved it so in the oil industry also.

"E pluribus unum" is just as sound for an industry or a business as for the nation. And persistence in the Ishmael-like habit of "his hand against everybody and everybody's hand against him" is just as unprofitable in everyday affairs as it is proving in Europe among nations today.

When The Oil and Gas Journal urged three years ago that every branch of the oil industry was equally concerned in the condition of every other branch, producers, refiners and distributors had been accustomed to regard one another as competitors rather than as units of the same industry. There is no such thought today among the bulk of the men in any branch. They know better from the experience of 1923, 1924 and 1925. And their hope for a good year in 1926 is based mainly upon the belief that none of the branches of the industry will rock the boat.

In the production end there is generally speaking a frank exchange of cooperative ideas making for greater efficiency all around. This is true, also, to a large extent, in the refining branch. It is becoming better understood all the time that information of progress may be shared with greater benefits than can be hoped from attempted monopolization of knowledge, greater benefit to each individual unit as well as for the whole industry.

There was a time in the automotive industry when supposed trade secrets were jealously guarded but the industry long since got beyond that policy when it became clear that there was more prosperity for everybody in the business by proving to the public the average reliability of the motor car. The better cars generally became the bigger the business.

That, we believe, will be found true in any trade, just as it has has been found that an inferior product may react against an entire industry.

The freedom with which the leading technologists have been exchanging information at petroleum association meetings has been matched by the frankness of experts in other industries, all with the idea of advancing the general efficiency.

When a man gets an idea for an improved practice or method he no longer hugs it to himself but understands that it alone may not benefit him so much as contributing it to the fund of common knowledge from which he also may draw.

There is nothing idealistic or altruistic about this but plain business sense that works out in dollars and cents, just as clearly as America's federated union proves its superiority over the disunited states of the old world.

Some of the most revolutionary influences, in the sense of changing or reversing accepted notions and customs, have been worked out by almost unnoticed evolution rather than by an epochal act or event. We find ourselves floating with a totally divergent stream before we realize anything has happened to us.

The growth of the idea and practice of cooperation in modern industry and business has been of that sort. Men engaged in the same line have discovered that the competition that pays best is competition of efficiency, not mere price cutting. And that they can learn from the other fellow and let him learn from them and still compete successfully in management.

Before the present period of enlightenment on this point they can remember how much effort was wasted in duplicating each other's mistakes and in lost motion and money that was not competitive but a mutual handicap.

One man, for instance, might think out an improvement and a rival might evolve another. Each might profit by his innovation but nothing like to the extent they could if the two improvements were worked together. The common sense of the modern business man is making headway against the old-time dog-in-the-manger theory.

Activity Increasing in Many Fields

Increases in Production Recorded in a Number of Areas With Wildcatting Getting Promising Showings

Continued activity in a majority of the fields of the country is reflected in increased production in many areas and promising showings in numerous wildcats. Interest again is shifting to the Inglewood Field in California, where some operators are showing signs of desiring to drill to test a possible deeper producing horizon. There are many who believe such a horizon exists and that Inglewood production may be increased materially should operators decide to drill deeper. High spots in the field news of the past week are shown in the following summary, the detailed operations being covered in the regular field reports in this issue.

Oklahoma

The Amerada Petroleum Corp. brought in a well in the Wewoka Pool which started at the rate of 2,552 bbls. Sunday morning. It is the fifth well in the pool to produce from the deep horizon discovered by the Magnolia Petroleum Co., whose discovery well is holding up above 3,400 bbls. daily. Two additional producing sands were discovered in the Garber Field. The well of the Indian Territory Illuminating Oil Co., in Section 24-9-6, Seminole County, has started considerable activity in that area. Interest in Logan County was heightened by a gas find in a test which will be drilled deeper.

Kansas

The Carter Oil Co. is taking over the development of the property on which is located the wildcat well of that company and D. P. Fleeger in Kingman County, and will drill the well deeper. In the Oswald Pool, in Russell County, the H. F. Wilcox-Russell Oil Co.'s No. 1 E. C. Munsell was making 8 bbls. an hour from sand at 2,996 feet.

Southwest Texas

Houston Oil Co.'s well in the Cole Gas Field, Duval County, offsetting the Cin-Tex Petroleum Co.'s discovery, was bailed but failed to make a flowing well. It was swabbing at the rate of several hundred bbls. a day and hoped to be developed into a bigger well. Operators are hoping the pool will be found to extend farther to the east, where for more than a mile there is undrilled territory.

Magnolia Petroleum Co. has begun checking the production of O. W. Killam in the Mirando Field, having purchased the production for $900,000, subject to 30 days' check, production to average over 2,000 bbls. daily. It has been a safe margin above that.

Moody and Seagraves and W. F. Morgan's No. 1 Walsh in Piedras Pintas Pool salt dome field, in Duval County, when bailed failed to respond. It has been showing gas and oil and may not have reached the discovery well sand, being 219 feet shallower. The Humble Co.'s No. 4 Walsh, the discovery well, has fluctuated from flowing and pumping 400 bbls. up to 1,420 and is now making 1,000 bbls. daily.

Eastern Fields

The deep sand in southeast Ohio, which has been producing the best completions in the eastern fields, attracted new interest with two wells in Hocking County, one making 300 bbls. after shot and the other making 110 bbls. the first 24 hours and 175 the second 24 hours. Muskingum County also reported a 225-bbl. well. Washington County shallow sand had its best well, a 30-bbl. producer.

A wildcat test in Bedford County, Pennsylvania, is of special interest. The Greene County wells are showing, as expected, a falling off from their initial output. West Virginia reports 48-bbl. and 40-bbl. wells.

Central West Fields

The Ohio Oil Co.'s well in Henry Township, Wood County, Ohio, west of Cygnet, is reported completed for 100 bbls. flush at 1,386 feet. A movement is on foot to have holders of Lima Field acreage unite in a plan for deeper drilling, probably to 4,000 or 5,000 feet. The hope is to find oil below the Trenton Rock and St. Peter formation.

Four producers making 60 bbls. daily are now reported from the Saginaw County, Michigan, Field, where three more wells are being drilled.

The Allendale Field, in Wabash County, Illinois, reports a 100-bbl. completion and one of 80 bbls.

Kentucky-Tennessee

The area south of Glasgow, in Barren County, Kentucky, is the scene of most recent activity following the completion by the Esslinger Oil Co. of a 50-bbl. flush producer in virtually wildcat territory. This is the third pool found in Barren County this year. There are hopes of extensions into Monroe and Allen Counties.

California

The Inglewood Field, in California, which was an important factor in that State's production during last year and which has been showing a steady and substantial decline in output for some time, is again looming as a most important cog in the wheel of prosperity. It has been believed in many quarters for a long time there was a deeper and more productive oil horizon at Inglewood and developments recently indicate some of the companies holding acreage in the field may start soon to test this deeper zone. Should good production be secured from a deeper pay, it is probable the horizon will be developed fairly quickly, adding substantially to the production of the field.

Ten wells were completed in the extension of the Long Beach Field, adding 2,049 bbls. of initial production but the output of the whole field is still showing a tendency to decline steadily, though slowly. An oil sand was picked up in a test in the extreme northeastern part of the field which is an important development. The increase in the posted prices of crude, favoring the light gravities, will doubtless result in more activity at Rosecrans where the oil is rich in gasoline content, and commands the highest prices.

A request has been made of the War Department by a Long Beach operator for permission to drill along the ocean front beyond mean high tide at Huntington Beach, where oil and gas seepages are common occurrences. This operator would drill a strip 2 miles long and 1 mile wide. He will have difficulty surmounting legal difficulties, however, it is believed.

Rocky Mountains

Prorating has been lifted in the Sunburst Field and production has jumped from around 9,000 bbls. to 17,500 bbls. Better weather has also increased activity and 14 new wells were begun during the past week.

The Midwest Refining Co. plans to drill 376 wells in Salt Creek this season, against 450 last year, the lesser number being because there is a sufficient supply in sight and the present production could be doubled by opening wells already drilled to the Lakota sand and pumping the upper sand wells to capacity.

In the Fort Collins Field of Colorado the Union Oil Co. of Colorado will drill 17 more wells this year. Owing to these being 4,500 feet or more this will cost almost as much as the Midwest program in Salt Creek.

At Cane Creek Dome, eastern Utah, the drillers are still busy on collapsed 10 inch. The Midwest Co. and Utah Southern have started a well on Shaffer Dome, 5 miles southwest of Cane Creek discovery.

Louisiana-Arkansas

The Lisbon area in Arkansas led in interest when Wingfield and associates' No. 2 Slaughter came in estimated around 1,500 bbls. daily, by far the largest well yet brought in there. Three hours after it was brought in it caught fire, which was extinguished six hours later. The well flows by heads and is reported making a head every 10 minutes. It is estimated a 1,000-bbl. producer.

Hopes that the Urania Field might be extended 1 mile west by the Standard's No. 1 Albritton were disappointed, failing to find anything in the regular producing horizon.

Townlot drilling in Tullos is increasing.

Urania has 18 new wells for the week with a combined output of 1,095 bbls. Ten are flowing, seven being pumped. Nine wells are waiting for standard rigs and 38 are drilling. Twenty derricks are standing, 13 tests have been rigged and 6 locations made.

Artesia, N. Mex.

Three additional wells were completed in the Artesia Field during the past week bringing the total number of producers to 145. The Dome Oil Co. brought in a well which made 140 bbls. the first 12 hours. A Chicago syndicate paid $1,250 per barrel for production in the proven area of the field. Members of the New Mexico Oil Men's Association voted to call upon the State Corporation Commission for relief from what is said to be discriminatory railroad rates on refined products.

Gulf Coast

The Boling Dome in Wharton County had four completions, two producers with a total of 950 bb'ls. initial, and two gassers. The Texas Company's No. 6 Taylor had an initial flow of 750 bbls., settling to 640 bb'ls., and the Oxford Oil Co.'s No. 1 Floyd came in making 200 bbls. of 36.2 gravity and is now averaging 55 bbls. with the temperature 62 degrees.

This pool is different from anything previously found. The salt area covers approximately 7,500 acres. The production to date is on the northwest flank and at varying depths. There is tremendous gas pressure. The oil is found in a sandy shale and varies in gravity.

The Lockport district in Calcasieu Parish, Louisiana, was again extended when the Vacuum-Gulf Co.'s No. 2 Bordages came in 3,780 feet flowing 700 bbls., 500 oil and 200 bbls. water. It settled to 200 bbls. of oil and is about 2,000 feet southeast. There are now five producers in the Lockport district.

North Central Texas

Church & Fields' well in Crane County, 15 miles north of and 1,000 feet deeper than No. 1 Taylor of the Independent Oil & Gas and Turman & Maxwell is standing about 2,200 feet in fluid and is reported to have shown some water when bailed to bottom. No. 1 Taylor is flowing once daily and making about 135 bbls.

Northern Eastland County has a wildcat and semi-wildcat getting attention; the latter may extend the Olden Pool.

Big Lake Oil Co. had three completions in Reagan County, for 2,190 bbls., 1,040 bbls. and 925 bbls., respectively.

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Late News From the Fields

NORTH CENTRAL TEXAS

FORT WORTH, Tex., Mar. 23.—One of the best producers yet brought in in the new north Brown County area is the E. L. Smith Oil Co.'s No. 1 Dunn, which is now reported as a new producer, though not yet completed. The well got the top of the shallow sand at 1,117 feet and at a total depth of 1,126 feet it is flowing flush at the rate of 70 bbls. an hour or 1,680 bbls. daily. This is a much better initial showing than was made by any of the other wells in this pool.

In northern Young County, Carter and others' No. 4 Benson is a new producer, making flush about 60 bbls. from the shallow sand at 913 to 927 feet. The Buttram Petroleum Co.'s No. 2 Preston in the southern part of Jack County, which was reported on the sand last week, is now making about 40 bbls. daily from 3 feet of sand topped at 2,062 feet.

Church & Fields' No. 1 University in Crane County has the 8-inch casing set at 2,450 feet and is standing 2,200 feet in fluid. When bailed to the bottom the well is reported to have shown some water. There is still about 60 feet of cavings on the bottom of the hole and it is being cleaned out.

In Coleman County Morrison & St. John's No. 2 Young has about 1,200 feet of fluid in the hole, some of which is water. It has a sand at 1,949-52 feet and is bailing and testing.

In the Electra district of Wichita County Bullington and others' No. 15 Jennings is showing for a good producer. The well swabbed 125 bbls. in 12 hours from the sand at 1,578 to 1,609 feet. Perkins & Cullum's No. 8 Beaver-Electra is showing for a fine well. It swabbed 250 bbls. from the sand at 1,607-33 feet.

Indications are that considerable new production will be added to the pipe line runs from Wilbarger County next week, judging from new wells in that area. The Humble Oil & Refining Co.'s No. 3-M Waggoner is completed with an estimated production of 250 bbls. at 1,905 feet. The same company's No. 4-O Waggoner is also a new completion making 200 bbls. from the sand at 1,909 feet. Landreth Production Co. has four new wells on the Waggoner lands, two of which, Nos. 2-I and 3-CC, have been completed making respectively 200 bbls. from the lime at 2,582 feet and 125 bbls. from the sand at 1,899 feet. The company's No. 5-F Waggoner is estimated good for 75 bbls. in sand at 1,921 feet and No. 2-G for 170 bbls. in sand at 1,911 feet.

McCamey and others' No. 33 Stephens is completed and has a flush production of 195 bbls. from the shallow sand at 1,268 feet. The Prairie Oil & Gas Co.'s No. 2-A Waggoner flowed 50 bbls. in 12 hours from the saturated lime at 2,338-50 feet.

There is also considerable new production showing up in Archer County. The Texhoma Oil & Refining Co.'s No. 7 Hamilton is a new completion making 140 bbls. from sand at 1,800-04 feet and Barkley and others' No. 22-C Wilson is good for 75 bbls. initial at 1,516-30 feet. Hill and associates' No. 1 Hutcherson is completed and on the pump, making 205 bbls. from sand at 1,382 feet.

Staley and others' No. 7-B Parrish, another new completion, is good for 70 bbls. flush from 1,583 feet and Perkins and others' No. 12 Anderson is completed for 135 bbls. in sand at 1,421-29 feet. One other completion is the Pioneer Refining Co.'s No. 1 Wolf, which is good for 200 bbls. from the sand at 1,340-56 feet.

The Humble Oil & Refining Co.'s No.

(Continued on Page 140)

Deeper Well in Crane County, Texas

Wildcat and Semi-Wildcat in North Eastland County Are Attracting Attention. Stephens County Well Makes 3,640 Bbls. Initial

By George R. Kelley

FORT WORTH, Tex., Mar. 22.—Prospects for a good producer in Church & Fields' No. 1 University in Crane County is the feature of development in the western part of Texas for this week. This well is approximately 15 miles north of the No. 1 Taylor of the Independent Oil & Gas Co. and Turman & Maxwell.

At present the Church & Fields well is waiting on a string of 8-inch casing which is to be set at a depth of 2,450 feet to shut off a flow of water said to be coming from 1,991 to 2,000 feet. The well has about 1,600 feet of fluid in the hole, a good part of which is live oil. It is also showing some gas.

Drillers were carrying considerable water when the pay formation was encountered at 3,029 feet and drilling was stopped at 3,030 feet. Most of the 3,030 feet of hole is open at present. Considerable interest has been created by the showing and there has been some lease trading in the vicinity of the prospective producer. The well is nearly 1,000 feet deeper than the Taylor well to the south which is producing from a pay at 2,045 feet.

The Independent Oil & Gas Co. and Turman & Maxwell well on the Taylor is now flowing an average of about once daily and making about 135 bbls. The well was drilled about 6 feet deeper early this week without any appreciable increase in either gas or oil showing. Preparations are being made to put the well on the swab and eventually on the pump.

One wildcat and one semiwildcat in the northern half of Eastland County are claiming the attention of operators in that district. The wildcat is the No. 1 Grove of H. H. Adams of Fort Worth. It got the top of the black lime at 3,320 feet when drilling was stopped immediately. The well is standing about 100 feet in oil according to latest reports and is showing a fair amount of gas at this depth.

The semiwildcat is Robert Oil Corp.'s No. 1 Wood in the Olden semishallow sand district. At last reports the well, which if it makes a producer, will effect a considerable extension to the south of the Olden Pool, was standing about 200 feet in oil at a total depth of 1,705 feet. Top of the pay was found at 1,692 feet.

In the northern part of Young County Carter and others have a nice well in No. 3 Benson in the shallow sand. It made a little more than 80 bbls. the first 24 hours and since that time has been producing regularly about 65 bbls. daily. The sand was topped at 913 feet and drilled into a total of 15 feet.

In the Burkburnett area of Wichita County the E. J. Stump Co.'s No. 1 Dutton is a new producer, not yet completed, but estimated good for 200 bbls. in sand at 1,811 to 1,814 feet.

There is one new producer in the shallow sand of the Nocona Field in northern Montague County, Benton & Woods' No. 3 Hinds. It has 20 feet of the shallow sand topped at 946 feet, and swabbed 100 bbls. in 12 hours. There are also three new completions in this area. Lesh and others' No. 1 Hinds is making 110 bbls. The Texas Co.'s No. 6-A Gist, 30 bbls. and the Texhoma Oil & Refining Co.'s No. 8 Howard making 60 bbls. from the deeper sand at 1,366 feet.

Buttram Petroleum Co. has a showing for another producer on its Preston lease in southern Jack County, its No. 2 being 1 foot in the sand at 2,053 feet. The big casing is being pulled preparatory to completing the well. The company's No. 1 on this lease is making around 75 bbls. daily.

In Archer County Lester Burns and others' No. 1 Jackson looks like a good producer. It has 4 feet of sand topped at 1,551 feet and in a little more than half an hour filled up nearly 300 feet in oil.

Archer County has a total of 30 completions this week, 20 producers with new production amounting to 1,715 bbls.

The best completion of the week anywhere in the territory was the Mid-Kansas Oil & Gas Co.'s No. 9 Hill in the Eliasville district of Stephens County. This well had an initial output of 3,640 bbls., producing from the gray lime at 3,179 feet.

Brown County had four completions, three producers, with total new production of 1,690 bbls. One well, Barkley and others' No. 2 Dunn, had a flush output of 1,200 bbls. daily.

Reagan County reported the completion of three new producers, all belonging to the Big Lake Oil Co., No. 58 University making 2,190 bbls., No. 59 making 1,040 bbls. and No. 37-A making 925 bbls. from the shallow pay level.

The district accounted for a total of 103 completions this week, compared with 89 for the previous week. Of this week's completions 62 are producers and 41 are failures with no gas wells reported. New production amounted to 14,680 bbls. daily, compared with new production last week of 3,855 bbbls. from 47 new producers. The big flush production this week is accounted for largely by the big well in Stephens, the three new producers in Reagan County and the flush in the shallow area of northern Brown County. However, Wilbarger County had eight new producers with a flush production of 1,685 bbls.

Average daily production this week showed a considerable gain over that of the previous week. Average daily runs for the week are 163,940 bbls. against 160,170 bbls last week, a gain of 3,770 bbls. daily.

Following is the table of completions by counties:

County—	Comp.	Prod.	Dry	Gas	Prod.
Wichita	15	10	5	0	285
Wilbarger	11	8	3	0	1,685
Archer	30	20	10	0	1,715
Young	11	4	7	0	215
Stephens	7	4	3	0	3,800
Eastland	3	0	3	0	.....
Brown	4	3	1	0	1,690
Reagan	3	3	0	0	4,155
Hutchinson	2	2	0	0	670
Clay	4	1	3	0	40
Montague	3	3	0	0	200
Haskell	1	0	1	0	.....
Shackleford	1	0	1	0	.....
Mitchell	3	3	0	0	200
Coleman	3	0	3	0	.....
Upton	1	1	0	0	25
Reeves	1	0	1	0	.....
Total this week	103	62	41	0	14,680
Total last week	89	47	39	3	3,855
Difference	14	15	2	3	10,825

Production Report For Week Ending March 8

Burkburnett

Gulf Production Co.	460
Humble Oil & Refining Co.	350
Magnolia Petroleum Co.	2,630
Panhandle Refning Co.	260
Prairie Oil & Gas Co.	30
Sinclair Oil & Gas Co.	55
Skelly Oil Co	160
Sun Co.	65
The Texas Co.	345
Texhoma Oil & Refining Co.	585
Miscellaneous	7,705
Total	12,645

Electra

Atlantic Oil Producing Co.	50
Empire Gas & Fuel Co.	870
Gulf Production Co.	965
Humble Oil & Refining Co.	100
Magnolia Petroleum Co.	3,245
Panhandle Refning Co.	35
Phillips Petroleum Co.	15
Prairie Oil and Gas Co.	130
Rio Bravo Oil Co.	550
The Texas Co.	3,315
Texhoma Oil & Refining Co.	1,535
Miscellaneous	6,060
Total	16,920

Iowa Park

Atlantic Oil Producing Co.	105
Gulf Production Co.	125
Humble Oil & Refining Co.	205
Magnolia Petroleum Co.	500
Panhandle Refining Co.	35
The Texas Co.	260
Texhoma Oil & Refining Co.	25
Miscellaneous	3,130
Total	4,385

Wilbarger County

Atlantic Oil Producing Co.	120
Gulf Production Co.	40
Humble Oil & Refining Co.	4,785
Landreth Production Co.	4,505
Prairie Oil & Gas Co.	50
Roxana Petroleum Corp	550
The Texas Co.	50
Texhoma Oil & Refining Co.	115
Miscellaneous	5,020
Total	15,235

Archer County

Atlantic Oil Producing Co.	200
Empire Gas & Fuel Co.	890
Gulf Production Co.	2,360
Humble Oil & Refining Co.	500
Independent Oil & Gas Co.	15
Magnolia Petroleum Co.	1,570
Marland Oil Co.	465
Panhandle Refning Co.	125
Phillips Petroleum Co.	830
Waite Phillips	1,525
Prairie Oil & Gas Co.	2,425
Roxana Petroleum Corp	395
Simms Oil Co.	345
Sun Co.	260
The Texas Co.	3,650
Texhoma Oil & Refining Co.	3,100
Miscellaneous	13,710
Total	32,365

Stephens County

Empire Gas & Fuel Co.	30
Gulf Production Co.	1,410
Humble Oil & Refining Co.	660
Magnolia Petroleum Co.	385
Mid-Kansas Oil & Gas Co.	1,475
Phillips Petroleum Co.	35
Prairie Oil & Gas Co.	890
Republic Production Co.	120
Roxana Petroleum Corp.	50
Simms Oil Co.	50
Sinclair Oil & Gas Co.	75
Sun Co.	150
The Texas Co.	1,050
Texas Pacific Coal & Oil Co.	1,150
Miscellaneous	5,030
Total	12,560

Ranger

Gulf Production Co.	235
Humble Oil & Refining Co.	35
Magnolia Petroleum Co.	975
Mid-Kansas Oil & Gas Co.	135
Panhandle Refining Co.	115
Prairie Oil & Gas Co.	615
Republic Production Co.	45
Sinclair Oil & Gas Co.	310
The Texas Co.	150
Texas Pacific Coal & Oil Co.	765
Miscellaneous	2,180
Total	5,560

Moran

Empire Gas and Fuel Co.	30
Humble Oil & Refining Co.	10
Magnolia Petroleum Co.	75
Phillips Petroleum Co.	750
Prairie Oil & Gas Co.	20
The Texas Co.	235
Texhoma Oil & Refining Co.	80
Miscellaneous	1,705
Total	2,905

Young County

Gulf Production Co.	225
Humble Oil & Refining Co.	365
Magnolia Petroleum Co.	200
Mid-Kansas Oil & Gas Co.	20
Panhandle Refining Co.	120
Roxana Petroleum Corp.	140
Simms Oil Co.	900
Sinclair Oil & Gas Co.	355
Sun Co.	65
The Texas Co.	565
Texhoma Oil & Refning Co.	350
Miscellaneous	3,750
Total	7,055

Eastland-Comanche

Empire Gas & Fuel Co.	10
Humble Oil & Refining Co.	135
Magnolia Petroleum Co.	670
Mid-Kansas Oil and Gas Co.	165
Panhandle Refining Co.	45
Prairie Oil & Gas Co.	115
Simms Oil Co.	30
Sinclair Oil and Gas Co.	25
Skelly Oil Co.	115
The Texas Co.	135
Texas Pacific Coal & Oil Co.	85
Miscellaneous	1,330
Total	2,860

Panhandle

Hutchinson County	5,225
Carson County	1,990
Wheeler County	140
Gray County	150
Potter County	20
Total	7,525

Miscellaneous Pools

Clay County	420
Montague County	1,595
Jack County	100
Throckmorton County	230
Baylor County	290
Palo Pinto County	420
Brown County	4,195
Coleman County	330
Callahan County	3,980
Mitchell County	3,220
Reagan County	28,985
Scurry County	45
Crockett County	50
Upton County	65
Total	43,925
Total this week	163,940
Total last week	160,170
Gain	3,770

Wichita County Completions

Burt and others' No. 1 Hansard, dry at 3,020 feet; Dale Oil Corp's. No. 1 Thomas, dry at 1,850 feet; Magnolia Petroleum Co's. No. 125 Reilly, 15 bbls. at 1,335 feet; Bridwell and others' No. 1 Waggoner Brothers, dry at 1,857 feet; Culberson and others' No. 1 Waggoner Brothers, 20 bbls at 851 feet; Mitchell and others' No. 1 Waggoner Brothers, 25 bbls. at 1,528 feet; Omohundro and others' No. 1 Chilson, dry at 742 feet; No. 2 Chilson, 15 bbls. at 738 feet; No. 3 Chilson, 20 bbls. at 749 feet; O'Neil and others' No. 1 Chilson, dry at 852 feet; Petroleum Producers Co's. No. 1 Douglas, 65 bbls. at 1,630 feet; Plummer and others' No. 6 Chilson, 10 bbls. at 689 feet; Staley and others' No. 2 Hines, 15 bbls; Texhoma Oil & Refining Co's. No. 5-M Burnett, 75 bbls. at 1,537 feet; Wolfe and others' No. 3 Daume, 25 bbls at 1,830 feet.

Wilbarger County

Gose and others' No. 1 Woodward, dry at 2,472 feet; Humble Oil & Refining Co's No. 6 Stephens, is making 350 bbls. at 2,387 feet; No. 2-M Waggoner, 60 bbls. at 1,901 feet; No. 1-O Waggoner, 525 bbls. at 1,917 feet; Landreth Production Co's. No. 6-A Waggoner, 495 bbls. at 1,870 feet; No. 1-BB Waggoner, 40 bbls. at 2,297 feet; No. 1-QQ Waggoner, 75 bbls. at 2,391 feet; Jim McCamey's No. 1 Waggoner, dry at 2,450 feet; McCamey and others' No. 22 Stephens, 50 bbls. at 2,109 feet; South Vernon Oil Co's No. 2 Zipperle, dry at 2,428 feet; Staley and others' No. 13 Stephens, 90 bbls. at 2,370 feet.

Archer County

Barkley and others' No. 21 Wilson, dry at 1,526 feet; Chenault and others' No. 1 Parrish, 55 bbls. at 1,580 feet; Empire Gas & Fuel Co's. No. 1 Turbeville, dry at 1,653 feet; No. 1 Young, dry at 1,608 feet; Pandem Oil Corp's. No. 1 Wilson, dry at 1,652 feet; Staley and others' No. 4-A Parrish, 95 bbls. at 1,584 feet; No. 5-B Parrish, 100 bbls at 1,581 feet; No. 6-B Parrish, 150 bbls. at 1,587 feet; Wilson Drilling Co's. No. 1 White, dry at 1,657 feet; Atlantic Oil Producing Co's. No. 1 Oldham, is making 60 bbls at 1,052 feet; Beasley and others' No. 1 Wolf, 15 bbls. at 1,353 feet; Booler and others' No. 1 Seay, dry at 1,600 feet; Bowers and others' No. 1 Darilek, 65 bbls. at 1,424 feet; Consolidated Oil Co's. No. 2 Wolf, dry at 1,570 feet; Camp Oil & Gas Co's. No. 2 Rachuig, 90 bbls. at 1,184 feet; Carter and others' No. 1 Martin, dry at 1,354 feet; Hughes and others' No. 13 Brom, 50 bbls. at 1,411 feet; Ilsing Production Co's. No. 2 Prideaux, 5 bbls. at 636 feet; M. & V. Oil Co's. No. 5 Kunkel, 55 bbls. at 1,178 feet; Merrick and others' No. 2 Darilek, dry at 1,534 feet; Pandem Oil Corp's. No. 9 fee, 100 bbls at 1,451 feet; No. 12 fee, 100 bbls. at 1,450 feet; Prairie Oil and Gas Co's. No. 2 Kevar, 15 bbls. at 1,391 feet; Roxana Petroleum Corp's. No. 1 Pandem, 65 bbls. at 1,451 feet; Sun Oil Co's. No. 2 Graham, dry at 1,303 feet; Shaw and others' No. 5-A Hayter, 40 bbls. at 1,322 feet; The Texas Co's. No. 4 Jeske, 400 bbls. at 1,167 feet; No. 1 Prideaux, 5 bbls. at 662 feet; Texhoma Oil & Refining Co's. No. 12 Oldham, 160 bbls. at 1,374 feet; No. 1-B Wolf, 90 bbls. at 1,348 feet.

Young County

Batex Oil Co's. No. 1 Portwood, dry at

1,380 feet; Bridwell and others' No. 3 Street, 10 bbls at 1,284 feet; Camp Oil & Gas Co's. No. 4 Campbell, dry at 914 feet; Carter and others' No. 2 Benson, 35 bbls at 938 feet; Kay and others' No. 1 Eichelberger, dry at 1,003 feet; Nine Hundred Oil Co's. No. 7 Benson, dry at 910 feet; Plains Production Co's. No. 2 Butler, dry at 1,104 feet; Reed and others' No. 1 Andrews, dry at 1,002 feet; The Texas Co's. No. 3 Boren, 125 bbls. at 1,080 feet; Texas Unity Oil Co's. No. 1 Edwards, dry at 1,004 feet; Underwood Drilling Co's. No. 1 Benson, 50 bbls. at 873 feet.

Stephens County

Mid-Kansas Oil & Gas Co's. No. 9 Hill, 3,640 bbls. at 3,179 feet; Mid-Texas Oil Co's. No. 4 Cunningham, 100 bbls. at 3,167 feet; Clark and others' No. 2 Litten, 20 bbls. at 1,733 feet; Humble Oil & Refining Co's. No. 6 Smith, 40 bbls. at 1,783 feet; McKinney and others' No. 1 McCleskey, dry at 3,970 feet; Texas Pacific Coal & Oil Co's. No. 62 Binney, dry at 1,837 feet; No. 10 Veale, dry at 4,160 feet.

Eastland County

Corzelius Brothers' No. 1 Whitson, dry at 3,465 feet; Lewis and others' No. 1 University, dry at 1,722 feet; Texas Pacific Coal & O.l Co's. No. 1 Pease, dry at 789 feet.

Brown County

Barkley and others' No. 1 Dunn, 480 bbls. at 1,099 feet; No. 2 Dunn, 1,200 bbls. at 1,114 feet; Pandem Oil Corp's. No. 1 Prather, dry at 1,412 feet; Rhodes and others' No. 10 Prather, 10 bbls. at 1,326 feet.

Reagan County

Big Lake Oil Co's. No. 58 University, 2,190 bbls. at 2,916 feet; No. 59 University, 1,040 bbls at 2,943 feet; No. 37-A Unversity, 925 bbls. at 2,430 feet.

Hutchinson County

Hutchinson Oil Co's. No. 1 Smith, 20 bbls. at 3,000 feet; Phillips Petroleum Co's. No. 2 Smith, 650 bbls. at 2,979 feet.

Clay County

Cooper and others' No. 1 Lynsky, dry at 1,648 feet; Cumley and others' No. 1 Stine, 40 bbls. at 1,824 feet; Western Oil Corp's. No. 1 Kaufman, dry at 1,595 feet; Whittekin and others' No. 1 Weeks, dry at 1,805 feet.

Montague County

Lesh and others' No. 1 Hinds, 110 bbls. at 960 feet; The Texas Co's. No. 6-A Gist, 30 bbls. at 961 feet; Texhoma Oil & Refining Co's. No. 8 Howard, 60 bbls. at 1,366 feet.

Haskell County

Herbert Oil Corp's No.1 Macon, dry at 2,506 feet.

Shackelford County

Mahlstedt Oil Co's. No. 1 Russ, dry at 1,325 feet.

Mitchell County

Atlantic Oil Producing Co's. No. 3 Womack, 75 bbls. at 3,028 feet; California Co's. No. 15 Morris, 65 bbls. at 3,040 feet; Eastland Oil Co's. No. 1 Adams, 60 bbls. at 3,005 feet.

Coleman County

Mahlstedt Oil Co's. No. 1 Atkinson, dry at 2,514 feet; McCamey and others' No. 1 Howe, dry at 1,900 feet; Monroe Production Co's. No. 1 McCrary, dry at 2,250 feet.

Upton County

Dixie Oil Co's. No. 1 Burleson, 25 bbls. at 2,230 feet.

Reeves County

Deep Rock Oil Co's. No. 1 Tatum, dry at 3,900 feet.

Wichita County Drilling

Cozy Oil Co.'s No. 10 Warren, is showing oil at 1,460 feet; No. 11 Warren, drilling at 1,000 feet; Fow'er and others' No. 1 Dodson, 1,450 feet; Magnolia Petroleum Co.'s No. 128 Reilly, cleaning out at 995 feet; No. 10 Warren, dri'ling at 1,460 feet; Texhoma Oil & Refining Co.'s No. 1-A Beach, 2,760 feet; Jeffers and others' No. 1 Harrell. 1.346 feet; Apple and others' No. 18-A Jennings, 1,400 feet; Armstrong and others' No. 1 McCormick, 1.230 feet; Cochran and others' No. 1 Sheldon, 1,800 feet; Culberson Co.'s No. 36 Waggoner Brothers, 1,100 feet; Culberson and Hunter's No. 2 Waggoner Brothers, 800 feet; Empire Gas & Fuel Co.'s No. 12-A Waggoner, 1,837 feet; Hereford Oil Co.'s No. 2-A Allingham, 1,550 feet; Humble Oil & Refining Co.'s No. 1-D Waggoner, 958 feet; Jones and others' No. 1 Jennings, 1,320 feet; Magnolia Petroleum Co.'s No. 70 Honaker, 1,598 feet; No. 1 Kelly, 1,565 feet; No. 3-A Maer, 890 feet; No. 54 Rio Bravo, 1,400 feet; No. 11 Watkins, 1,435 feet; Moore and others' No. 7 Burnett, 1,320 feet; Omohundro and others' No. 4 Chilson, underreaming; O'Neil and others' No. 24 Rio Bravo, drilling at 1,500 feet; Panhandle Refining Co.'s No. 1 Powell, 1,870 feet; Petroleum Producers Co.'s No. 2 Douglas, 1,460 feet; Plummer and others' No. 7 Chilson, 400 feet; Staley and others' No. 3 Hines, 400 feet; Texhoma Oil & Refining Co.'s No. 1 Edgerly, 1,950 feet; No. 1 Douglas, 1,600 feet; No. 3 Mitchell, showing oil at 1,435 feet; No. 16 Waggoner Brothers, showing oil at 602 feet; Underwood Drilling Co.'s No. 1 Allen and Kemp, drilling at 1,100 feet; United Production Co.'s No. 1 Snow, 500 feet; Weaver and others' No. 1 Nance, on sand at 1,692 feet.

Wilbarger County

Atlantic Oil Producing Co.'s No. 3 Sigler-Waggoner, on sand at 2,027 feet; No. 4 Sigler-Waggoner, drilling at 1,350 feet; Barkley and others' No. 11-A Stephens, fishing at 2,325 feet; Bridwell and others' No. 13 Stephens, drilling at 1,210 feet; Burton and others' No. 3 Castlebury, spudding; Humble Oil & Refining Co.'s No. 4-A Stephens, dri'ling at 1,175 feet; No. 45 Stephens, cleaning out at 1,451 feet; No. 46 Stephens, drilling at 625 feet; No. 5-G Waggoner, showing oil at 2,401 feet; No. 8-H Waggoner, drilling at 805 feet; No. 9-H Waggoner, 297 feet; No. 2-K Waggoner, fishing at 2,009 feet; No. 3-K Waggoner, drilling out plug at 2,296 feet; No. 4-K Waggoner, spudding; No. 1-L Waggoner, drilling at 2,547 feet; No. 6-M Waggoner, 125 feet; No. 1-N Waggoner, showing oil at 1,908 feet; No. 5-O Waggoner, drilling at 152 feet; Independent Oil & Gas Co.'s No. 1 Waggoner, 2,780 feet; Landreth Production Co.'s No. 7-A Waggoner, cementing casing at 1,840 feet; No. 7-D Waggoner, drilling at 2,300 feet; No. 4-G Waggoner, 300 feet; No. 5-G Waggoner, 1,776 feet; No. 6-G Waggoner, spudding; No. 3-I Waggoner, drilling at 1,525 feet; No 2-M Waggoner, showing oil at 2,385 feet; No. 2-Q Waggoner, drilling at 2,097 feet; No. 5-CC Waggoner, 1,625 feet; No. 1-EE Waggoner, 2,433 feet; No. 1-HH Waggoner, 2,488 feet; No. 3-NN Waggoner, 1,885 feet; No. 4-NN Waggoner, 1,442 feet; No. 1-PP Waggoner, 1,720 feet; No. 2-QQ Waggoner, 100 feet; No. 1-SS Waggoner, underreaming; No. 1-AAA, drilling at 1,340 feet; McCamey and others' No. 10 Stephens, 2,402 feet; No. 18 Stephens, 1,780 feet; No. 30 Stephens, 1,960 feet; No. 31 Stephens, cleaning out at 2,000 feet; No. 34 Stephens, drilling at 1,070 feet; Magnolia Petroleum Co.'s No. 71 fee, 1,405 feet; No. 48 Piper, 1,645 feet; No. 52 Sumner, 2,060 feet; No. 2 Moore-Waggoner, 610 feet; Milham Corp.'s No. 2-A Waggoner, testing at 2,390 feet; No. 3-B Waggoner, drilling at 1,375 feet; No 1-D Waggoner, 1,985 feet; No. 5-H Waggoner, 2,345 feet; No. 2-L Waggoner, spudding; Miller Oil Co.'s No. 2 Waggoner, drilling at 2,312 feet; Murchison and others' No. 1 Streit, 300 feet; Rio Bravo Oil Co.'s No. 1, Section 19, underreaming; Roxana Petroleum Corp.'s No. 6-A Waggoner, showing oil at 1,916 feet; No. 7-A Waggoner, drilling at 812 feet; No. 8-A Waggoner, 600 feet; Shamrock Oil Co.'s No. 1-B Waggoner, 1,875 feet; Shipley and others' No. 1 Waggoner, cleaning out at 1,278 feet; Sloan and others' No. 2 Waggoner, drilling at 920 feet; Staley and others' No. 13-B Bond, drilling at 2,033 feet; The Texas Company's No. 1 Guggisberg, spudding; No. 1 Zipperle, drilling at 2,450 feet; Texhoma Oil & Refining Co. and others' No. 1 Waggoner, 2,118 feet; Waggoner Refining Co.'s No. 1-A Waggoner, 470 feet; Whitehead and others' No. 1-A Waggoner, fishing at 540 feet; Winnipeg Oil Co.'s No. 1 Lloyd, drilling at 2,200 feet.

Archer County

Darr and others' No. 1 Ferguson, drilling at 1,580 feet; Anderson and others' No. 5 Perkins, 510 feet; Ashcraft and others' No. 1 Curry, 1,495 feet; Burns and others' No. 1 Jackson, standardizing at 1,559 feet; No. 6 Brown, cementing casing at 1,583 feet; Chenault and others' No. 2 Parrish, drilling at 1,100 feet; Hart and others' No. 1 Moss, 310 feet; Hi'l and others' No. 6 Hutcherson, 830 feet; Magnolia Petroleum Co.'s No. 6 Rutty, 600 feet; McCarty Oil Co.'s No. 23-B Wilson, 1,160 feet; No. 7-C Wilson, 1,395 feet; Panhandle Refining Co.'s No. 1 White, showing oil at 1,783 feet; Waite Phillips' No. 1 Albright, drilling at 1,320 feet; No. 15-B Wilson, 1,425 No. 16-B Wilson, 1,500 feet; Roxana Petroleum Corp.'s No. 1 Mangold, 1,020 feet; Shappell Oil Co.'s No. 1-A Wilson, showing oil at 1,612 feet; Sorsfield and others' No. 1 Sloop, drilling at 783 feet; Staley and others' No. 5-A Parrish, 1,400 feet; No. 8-B Parrish, 1,400 feet; The Texas Company's No. 1-B Dycus, 500 feet; No. 1-B Turbeville, 1,620 feet; No. 11 Carter, on sand at 1,358 feet; No. 33-B Wilson, drilling at 1,100 feet; Texhoma Oil & Refining Co.'s No. 2-A Parrish, on sand at 1,567 feet; Tidal Oil Co.'s No. 1 Griffin, drilling at 1,510 feet; Whittekin and others' No. 1 McCrory, 890 feet; Woods and others' No. 1-A Wilson, fishing at 1,606 feet; American Refining Co.'s No. 7 Portwood, showing oil at 1,388 feet; Barnsdall Oil Corp.'s No. 2 Lowe, drilling at 300 feet; B. S & B. Oil Co.'s No. 1 Ward, running casing at 920 feet; Fisher and others' No. 9 Rogers, drilling at 440 feet; Golding and others' No. 2 Lauster, 760 feet; Ilsing Production Co.'s No. 5 Prideaux, 675 feet; Magnolia Petroleum Co.'s No. 14 Lowe, on sand at 1,236 feet; No. 10 Portwood, dri'ing at 200 feet; Prairie Oil and Gas Co.'s No. 5 Kreeger, showing oil at 1,424 feet; No. 6 Kreeger, showing oil at 1,420 feet; Richards and others' No. 1 fee, drilling at 880 feet; Roxana Petroleum Corp.'s No. 2 Pandem, on sand at 1,435 feet; No. 3 Pandem, running casing at 1,431 feet; Shaw and others' No. 1 Robinson, drilling at 510 feet; The Texas Company's No. 7 Bearden, drilling at 730 feet; No. 19 Hill, showing oil at 1,398 feet; No. 20 Hill, drilling at 1,160 feet; No. 5 Jeske. 890 feet; No. 2 Prideaux, on sand at 657 feet; Texas Unity Oil Co.'s No. 1 Kreeger, dri'ing at 1,180 feet; United Production Co.'s No. 1 Prideaux, 630 feet; Atlantic Oil Producing Co.'s No. 2 Oldham, showing oil at 1,054 feet; Camp Oil & Gas Co.'s No. 1 Bell, drilling at 1.125 feet; Carter and others' No. 4 Cowan, 300 feet; Consolidated Oil Co. and The Texas Company's No. 2 Coody, drilling at 700 feet; Creath and others' No. 1 Turbeville, 450 feet; Decker and others' No. 1 Holley, drilling at 1,220 feet; Perkins and others' No. 13 Anderson, 230 feet.

Young County

Adams and others' No. 1 McClatchey, dri'ing at 1,405 feet; Appleby and others' No. 1 Stewart, 702 feet; Atkinson and others' No. 1 Donnell, 605 feet; Atlantic Oil Producing Co.'s No. 2 Powell, 1,010 feet; Brashear and others' No. 3 Marshall, 1,610 feet; Beavers and others' No. 1 Teague, 987 feet; Christie Brothers' No. 1 Vernon, 745 feet; Hoffer Oil Corp.'s No. 1 Boyd, 1,390 feet; Log Cabin Oil Co.'s No. 1 Calvin, 706 feet.

Stephens County

Adamson and others' No. 1 Bradford, drilling at 2,208 feet; Barnhart and others' No. 1 Bradford, 2,010 feet; Corzelius Brothers' No. 1 Goforth, 2,300 feet; Eidson and others' No. 4 Crowley, 1,250 feet; Hanlon Gasoline Co.'s No. 1 Curry, 805 feet; No. 2 Curry, 617 feet; Meredith and others' No. 1 Chesley, 408 feet; Quakins Petroleum Co.'s No. 12 Harmon, 710 feet.

Eastland County

Amyx and others' No. 1 Connellee, drilling at 1,905 feet; Corzelius Brothers' No. 1 Poe, 1,435 feet; Hart Brothers' No. 1 Johnson, 2,140 feet; Root and others' No. 1 Strickland, 1,819 feet; Rumbaugh and others' No. 1 White, 1,905 feet; Simons and others' No. 1 Morgan, 1,100 feet; Kirk and others' No. 1 Blackwell, 1,410 feet; Magnolia Petroleum Co.'s No. 1-B McMinn, 1,140 feet; No. 2 Rice, 370 feet; Panhandle Refining Co.'s No. 1 Wright, 306 feet; Texas Pacific Coal & Oil Co.'s No. 26 Butler, 1,456 feet.

SHOTS FAIL TO INCREASE TWO WELLS IN GRAY COUNTY, TEXAS PANHANDLE

By George R. Kelley

AMARILLO, Tex., Mar. 20.—The No. 2 Worley & Reynolds well of the H. F. Wilcox Oil & Gas Co. in Gray County, Texas Panhandle, has been shot with 46 quarts of nitroglycerin from 2,861-93 feet in the granite wash formation. Before the shot the well was reported to be making something more than 600 bbls. daily. Since the shot is making a flow estimated between 500 and 600 bbls. a day, with about 15 feet of cavings still in the bottom of the hole. About 30 feet of the cavings which followed the shot have already been cleaned out.

The Empire Gas & Fuel Co.'s No. 1 Heithholt wildcat in Gray County has also been given a shot of 30 quarts from 3,248-58 feet but there was practically no increase in the output of either gas or oil.

In Carson County, The Texas Company's No. 4 Mary Couts Burnett has reached the pay formation and at last reports is standing 300 feet in oil. It is shut down for storage at present just on top of the pay at 2,867 feet. The Texas Company has been working on this well for more than a year.

In Moore County the Amarillo Oil & Gas Co. is completing its No. 2-A Masterson as a big gasser. The bottom of the hole stands at 2,540 feet and the well is making 56,000,000 feet of gas daily.

The Get Oil Co. has made the location for a wildcat test to be drilled in Sherman County. The location is on the Lee Bivins ranch, 300 feet each way from the southeast corner of Survey No. 35, Block 3-B, G. H. & H. survey.

The South Hutchinson County area continues to be the most active spot in the Panhandle, but this week has failed to bring any startling developments in this area. The Summit Oil Co.'s No. 1 J. A. Whittenburg is still flowing at the rate of about 400 bbls. daily from the granite wash at 2,932-89 feet. It will be drilled deeper.

The Westex Oil Co. has the making of two good producers on the J. A. Whittenburg, as both its No. 1 and No. 2 are showing for oil. No. 1 made a flow of 150 bbls. the first 24 hours after encountering the pay level at 2,873 feet and drilling at 2,935 feet. No. 2 has been drilled only to 2,884 feet and is spraying between 15 and 20 bbls. daily at this depth. Drillers on this operation are now busy fighting a cave.

The Travelers Oil Co.'s No. 1 Kingsland is flowing and spraying together a little less than 100 bbls. daily from the pay at 2,879-82 feet. The well has a fishing job at this depth also, the tools having been lost in the hole. The White Eagle O.l & Refining Co. seems to be nearing the interesting point with its first operation in this field; No. 1 Smith has reached a depth of 2,640 feet and is making 3,000,000 feet of gas. At present drilling has been stopped while the boiler is being moved back.

The No. 1 Johnson of the Prairie Oil & Gas Co. and the Texas Pacific Coal & Oil Co. is still making about 50 bbls. daily. Top of the pay was found at 2,969 feet and the hole has been carried to a total depth of 2,017 feet. Ramsey and others' No. 1 Johnson is making 2,000,000 feet of gas from the gas producing formation passed through at 2,240 feet. It is now drilling at 2,260 feet.

The Phillips Petroleum Co. and the Drysdale Oil Co. have a showing for a producer in No. 1 Weatherly which is

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Another Good Well in Wewoka Field

Amerada Extends Productive Area Quarter Mile. Two More Sands Discovered in the Garber Field

By C. D. Lockwood

Another good Wilcox sand well in the Wewoka Pool of Seminole and Hughes Counties, Oklahoma; the discovery of two more productive sands in the Garber Field of Garfield County, and the building of numerour rigs around the Indian Territory Illuminating Oil Co.'s 1,000-bbl. producer in Section 24-9-6, northern Seminole County, constituted about all of the important field news in the State during the past week. A Logan County well belonging to the Texas & Pacific Coal & Oil Co., attracted some attention due to rumors of a big gas production and the fact the area in which it is located is being watched closely, but investigation revealed only a small amount of gas at about 3,880 feet, which was drilled through.

The new Wilcox sand producer in the Wewoka Pool is the Amerada Petroleum Corp.'s No. 1 Frederick, NW cor. NE NW, Section 5-7-8. It is the fifth well in the pool to produce from the deep horizon and extends the productive area a quarter of a mile to the east. It came in about 7 o'clock Sunday morning and during its first 24 hours flowed 2,552 bbls. from 4 feet of sand topped at 4,134 feet, making it the best deep sand well in the area since the original Magnolia producer came in. The latter is still holding up above 3,400 bbls. daily. The temperature of the oil in the new Amerada well is high, testing around 105 degrees, but this is not regarded as serious in view of the fact that the Magnolia's discovery came in with a fever testing about 110 to 112 degrees but has not shown any water. The Amerada Petroleum Corp. has two other tests now drilling on the same lease, No. 2 being in the NE cor. NW, fishing for drill pipe at 3,478 feet, and No. 3, a location south of No. 1, drilling ahead with standard tools at 3,595 feet. This well ought to hit the deep pay sometime during the coming week, barring accidents.

I. T. T. O. Well Starts Activity

Eight new tests are starting up in the immediate vicinity of the Indian Territory Illuminating Oil Co.'s discovery in the C NW NW NE of Section 24-9-6, which flowed 1,072 bbls. Sunday, March 21, from total depth of 4,012 feet, having been producing about three weeks. The same company was building a rig in the C NW NW SE and another in the SW NW SE; the Tidal Oil Co. was also building rigs in the NE cor. SW and the SE NE SW; the Mid-Continent Petroleum Corp. had a rig up in the NE cor. SE SW; the Gypsy Oil Co. had a rig in place for No. 1, in the SE cor. NE NW; the Amerada Petroleum Corp. was building a rig in the NW cor. NE SE, the I. T. I. Oil Co. had a rig for its No. 1 in the SW cor. of the NE, and the Barnsdall Oil Corp. had a rig for No. 1 Carter, SE cor. NW, all in Section 24-9-6.

In the same township but in other sections around the above area, the Independent Oil & Gas Co. was building a rotary rig for its No. 1, SW cor. NE, Section 26-9-6. The Tidal Oil Co. was drilling at 1,930 feet in the NE cor. NW NW, Section 15-9-6. The Mid-Kansas Oil & Gas Co. staked a location in the NW cor. NE, Section 25-9-6, and J. F. Parks also made a location in the SE cor. SW SE, Section 27-9-6.

Two tests are under way in the vicinity of the Kingwood Oil Co.'s No. 1 McFarland, NE cor. SW SE, Section 29-8-9, north of Holdenville in Hughes County. The Kingwood and others have the entire quarter section on which the discovery is located and are building a rig for No. 2 in the NW cor. SE SE. The original well is now making about 300 bbls. daily. The Independent Oil & Gas Co. is also building a rig in the SW cor. NW, Section 28-8-9.

South Papoose Pool

The South Papoose Pool is not turning out to be a world beater, but may possibly do better from deeper sands. The Independent Oil & Gas Co. will try to ascertain the possibilities of the Wilcox sand by deepening its No. 6 B. Harjo in the SW cor. NW SW, of Section 26-9-9. Its old total depth was 3,418 feet. The same company's No. 7 Harjo, in the SW cor. of the same section, was good for only 290 bbls., 6 per cent water and 4 per cent b.s. from the regular sand at 3,358-90 feet and the company's No. 2 Proctor, NW cor. SW NW, same section, found a hole full of water at 3,505-21 feet. The Mid-Kansas Oil & Gas Co.'s No. 1 Harjo, NE cor. Section 26, was likewise a water well at 3,380-88 feet and the Waite Phillips Co.'s No. 1 in the NW cor. of Section 35-9-9, encountered water at 3,442-44 feet. Counting the Independent's No. 6 which is being deepened to the Wilcox horizon there are nine wells drilling in this pool.

As mentioned in the opening paragraph, two new sands were found productive in the well-known Garber Pool during the past week, making a total of four new horizons added to the already long list within the past month. This will undoubtedly result in a stimulation of drilling in this field and will cause one or more of the companies to make a cable tool test of the formations between approximately 2,300 feet and 3,700 feet to find out how many good sands have been mudded off by the rotaries in their rush for the Wilcox and Siliceous lime production. The Roxana Petroleum Corp.'s No. 6-L Schroeder, NE cor. SW SW, Section 18-22-3w, started flowing at the rate of 120 bbls. an hour from sand at 3,055-61 feet on March 14 but a string of tools was lost in the hole and the hole caved badly. The tools were recovered during the past week and Monday morning's gauge showed 3,206 bbls. with no water. This sand is correlated by some of the geologists as equivalent to the Stalnaker or Tonkawa sand while others think it is the Layton.

The Mid-Continent Petroleum Corp. and Marland Oil Co.'s No. 40 Walker, in the NE cor. SE, Section 13-22-4w, was deepened from the 1,900-foot sand to another pay at 2,498 feet and with the bit 3 feet in the formation the well flowed 460 bbls. The Sinclair Oil & Gas Co. is rigging up to deepen a 2,300-foot producer, its No. 1, in the SE cor. NE, of Section 13-22-4w, and is building a rig for No. 26 W. Kistler, NE cor. NW NW, Section 19-22-3w. The Roxana Petroleum Corp. is starting three new tests. No. 3-L, SE cor. SW SW, Section 8-22-3w; No. 4-L, SE cor. NW SW, and No. 7-L.

Garber Production

The Garber Pool produced 24,487 bbls. last Friday from all sands. Following is the deep sand production in the Garber Pool for the week ended March 16:

Company—	Wells	Bbls. Oil	Bbls. Water
Franchot	1	351	0
Carter Oil Co.	2	239	210
Healdton Oil & Gas Co.	3	64	92
Mid-Continent-Marland	11	776	1,500
Roxana Pet. Corp.	11	1,802	1,040
Sinclair Oil & Gas Co.	25	13,512	10,408
Total	53	16,744	12,210

The Magnolia Petroleum Co. has staked a location in the NE cor. SE of Section 29-7-8, Hughes County, south of Wewoka. This is an offset to the Brock well which now pumps about 110 bbls. daily.

The Roxana Petroleum Corp.'s No. 1 Barnett, C SW SW NE, Section 24-9-10, Hughes County, about 2 miles east of Wetumka, found 1,000,000 feet of gas in the Lyons sand at 3,222-40 feet and was drilling ahead.

The new Kay County Pool-opener of the Marland Oil Co. and Roxana Petroleum Corp., near the Kansas line in the NE cor. of Section 13-29-2w, was running 5-inch pipe Mondoy. The 6-inch was set at 3,445 feet and the 5-inch is to be run to 3,880 feet, the top of the sand, with one joint perforated. Total depth of the hole is 3,882 feet and the well is making about 210 bbls. of oil and about 40 bbls. of water as near as it can be estimated.

Seminole Producer

In Seminole County, the Magnolia Petroleum Co.'s No. 1 Norville, C SW SE SW, Section 14-8-7, was good for 290 bbls. the first 24 hours from the Deaner sand at 3,239-45 feet.

The Maud district of Pottawatomie County had another deep sand showing when the Magnolia Petroleum Co.'s No. 1 Vieux, C NE SE SE, Section 13-7-4, had 1,000 feet of oil in the hole from sand at 4,061-67 feet, but drilled through it and was going ahead in lime at 4,098 feet.

Following is the production by companies in the Ingalls, or Olean Pool, of Payne County for the week ended March 15:

Company	Wells	Bbls.
Deep Rock Oil & Refining Co.:		
Goodenough	3	347
Derry	3	562
Boyles	3	242
Barth	1	122
Shannon	1	82
Posey	1	off
Fulton	1	217
Pure Oil Co., Ostander	1	160
Amerada Petroleum Corp., Haley	3	287
Mulberry Oil Co., Haley	2	160
Total	19	2,179

Production By Pools

Following was the average daily production in several important pools for the week ending as indicated:

Burbank Field Week Ending March 17, 1926

	Wells	Bbls.
Lewis Oil Co.	15	836
Carter Oil Co.	281	6,209
Comar Oil Co.	7	95
Devonian Oil Co.	16	127
Mid-Co. Petroleum Corp.	106	1,240
Gypsy Oil Co.	193	2,643
Kewanee Oil & Gas Co.	25	212
Laurel Oil & Gas Co.	16	139
Lorraine Petroleum Co.	15	79
Midland Oil Co.	37	637
Mid-Kansas Oil & Gas Co.	41	1,054
Peters & Oliphant	3	579
Phillips Petroleum Co.	179	10,336
Phillips Petroleum Co. and Delmar Oil Co.	16	876
Phillips Pet. and Skelly	180	2,461
Midland Oil Co.	1	13
Prairie Oil & Gas Co.	130	3,990
Producers & Refiners	29	249
Roxana Petroleum Corp.	64	522
Seamans and others	1	21
Simons and Moore	29	226
Sinclair Oil & Gas Co.	144	1,434
Skelly Oil Co.	28	841
Tidal-Osage Oil Co.	42	482
The Texas Co.	16	339
Twin State Oil Co.	24	360
Total	1,628	36,000

Kay County Extension of Burbank

George Bole	3	223
Carter Oil Co.	11	806
Comar Oil Co.	17	1,028
Mid-Co. Petroleum Co.	16	834
Gypsy Oil Co.	18	284
Laurel Oil & Refining Co.	5	144
Mid-Kansas Oil & Gas Co.	10	792
Phillips Petroleum Co.	32	2,250
Prairie Oil & Gas Co.	4	101
Pure Oil Co.	5	133
Roxana Petroleum Corp.	8	255
Dye & Tomlinson	8	306
Skelly Oil and Phillips Pet.	20	294
Sinclair Oil & Gas Co.	5	209
The Texas Co.	16	171
Twin State Oil Co.	16	776
Total	193	8,606
Grand total	1,821	44,606

Tonkawa Field

Amerada Petroleum Co.	38	1,858
Blackwell Oil & Gas Co.	31	718
Carter Oil Co.	4	97
Champlin Refining Co.	2	16
Comar Oil Co.	366	16,445
Mid-Continent Oil Co. and Marland Oil Co.	21	3,319
Gypsy Oil Co.	110	4,578
Healdton Oil & Gas Co.	26	529
Wentz Oil Corp.	50	9,508
McMan Oil Corp.	2	38
Pennok Oil Co.	32	816
Phillips Petroleum Co.	3	45
Prairie Oil & Gas Co.	12	288
Sinclair Oil & Gas Co.	1	7
T. B. Slick and Comar Oil	38	2,103
Southwestern Pet. Co.	15	314
The Texas Co.	12	1,470
White Eagle	7	113
Total	770	42,262

Tonkawa Deep Sand

Amerada Petroleum Co.	8	1,382
Pennok Oil Co.	7	311
Comar Oil Co.	57	10,596
Gypsy Oil Co.	17	2,346
T. B. Slick	7	1,396
McMan Oil Co.	1	5
Blackwell Oil & Gas Co.	4	227
Wentz Oil Co.	16	8,727
The Texas Co.	11	1,524
Phillips Petroleum Co.	1	11
Mid-Continent and Marland Oil Co.	5	3,059
Total	134	29,584
Total deep sand production to date		29,550,192

Davenport Pool Week Ending March 16

	Wells	Bbls.
Magnolia Petroleum Co.	48	4,697
Gypsy Oil Co.	10	3,840
Phillips Petroleum Co.	7	460
Pure Oil Co.	2	700
Selby Oil and Southwestern Petroleum	11	790
Southwestern Petroleum Co.	2	860
Prairie Oil & Gas Co.	19	2,092
Carter Oil Co.	7	296
Skelly Oil Co.	7	904
The Texas Co.	15	4,360
Twin States Oil Co.	8	428
Sinclair Oil & Gas Co.	1	50
Amerada Petroleum Corp.	9	1,559
Shaffer Oil & Refining Co.	3	130
Total	156	21,564

Garfield County

In the Garber Field the Sinclair Oil & Gas Co. has spudded No. 39 SE cor. NE Section 13-22-4w, and No. 7 Kisner, SE cor. NE SE Seciton 36-22-4w, is rigged up; the rig is built for No. 32 Hartley, NE cor. SW NW Section 18-22-3w, this will be a 2,700 foot test. Roxana Petroleum Corp. is drilling at 850 feet in No. 5-H, NW cor. SW, Section 18-22-3w, and Sinclair Oil & Gas Co's. No. 31 SW cor. NW, Section 18-22-3w, is drilling at 1,150 feet.

Near Enid, Ashby Blair has rigged up to deepen an old well in No. 1, NW cor. NW, Section 3-22-5w.

Kay County

Eclipse Drilling Co. has a dry hole at 3 880 feet in No. 1, NE cor. SW, Section 20-27-4.

North of Tonkawa, Palmer Dickie has spudded No. 1 NE cor NW, Section 28-26-1w.

In the North Braman Pool, the Comar Oil Co's. No. 8 Buel, C NE SW NE, Section 21-29-1w, was drilling at 485 feet, and No. 12 Duncan C SE NW SW, same section, had a rig on the ground.

In the South Braman Pool, the Comar Oil Co. completed its No. 4, C NE NE SW, Section 5-28-1w, for 2,684 bbls. of 41.2 gravity oil in sand at 2,358-70 feet. The same company was rigging up No. 5 Biddle C E½ NE SW, and No. 2 Lawrence, SE cor. NW, both in the same section.

Noble County

Hatch and others are shut down at 150 feet in their No. 1, CSL SE NE SW, Section 7-21-1w.

In the north part of the Burbank Field, the Phillips Petroleum Co's. No. 9, CWL SW NW SE, Section 2-27-5, was completed for 75 bbls. following a shot of 120 quarts in sand at 2,950-3,010 feet. The same concern's No. 10, C SE NW SE, same section, was finished for 125 bbls. after it was shot with 120 quarts in sand at 2,936-86 feet, total depth being 2,991 feet.

Osage County

In the Burbank Field the Skelly Oil Co. has built the rig for No. 8 NW cor. NE SW, Section 2-27-5. Phillips Pe-

troleum Co's. No. 15 NW cor. SE, Section 2-27-5 is a new rig; and No. 15 NW cor. NE SE, Section 2-27-5, is completed for 1,500 bbls. from sand 2-918-2,974 feet. The Carter Oil Co's. No. 8 NW cor. SE NW Section 9-26-6, had sand at 3,268-69 feet with a hole full of water. It was plugged back to 3,252 feet where a show of oil was found and is making 50 bbls. on the pump. The best pay was found at 3,178-84 feet.

In the new Prairie Pool southeast of Burbank, the Prairie Oil & Gas Co's. No. 2, CWL NW SE SE, Section 21-25-6. was shot with five quarts and made 337 bbls. afterward from sand at 2,692-2,728 feet. Same company's No. 3, CSL SE SW SE, same section, made 120 bbls. after shots of 5 and 10 quarts. Top of the sandy lime was at 2,675 feet, first oil at 2,690 feet and total depth 2,714 feet. The Prairie was spudding No. 4, CSL SW SE SE, Section 21.

The Continental Oil Co. deepened its No. 1, C SE SE SE, Section 29-24-8, from 2,593 to 2,601 feet but didn't help it and it was completed for 18 bbls. of 38.2 gravity crude. Foster & Davis plugged their No. 8, C SW NW NW, Section 36-24-8, as dry at 2,723 feet.

The Tidal-Osage Oil Co. was drilling at 345 feet in No. 1, C SE SE SE, Section 1-23-8. The Continental Oil Co's. No. 1, C SE NW, Section 12-23-8, was drilling below 420 feet.

The Continental Oil Co. and Prairie Oil & Gas Co. spudded No. 2, SW cor. NE SE, Section 5-23-9.

The Amerada Petroleum Corp's. No. 18, SE cor NW SE, Section 16-22-9, topped the lime at 2,310 feet, and was completed for 480 bbls. natural from sand at 2,350-60 feet.

A 12-bbl. producer was completed by the Tidal-Osage Oil Co. in No. 24, CWL SW NW, Section 33-22-10, in sand at 842-52 feet, gravity being 33.8 degrees. The same company was drilling a twin well, No. 25, at 635 feet and had a rig up for No. 26, C W½ NW, same section.

The Kewanee Oil & Gas Co. had a rig in place for No. 1, C NE NE SW, Section 4-22-11.

A duster was abandoned by the Tidal-Osage Oil Co. in its No. 4, CWL SW, Section 11-21-10, at 2,558 feet. The Oklahoma Natural Gas Co. completed its No. 710, C SE SE NW, Section 14-21-10, for 1,000,000 feet of gas in sand at 1,888-1,935 feet, total depth being 1,940 feet. This well had a small show of oil at 1,936 feet, but was plugged back to 1,935 feet.

The Sand Springs Home was drilling its No. 1, C NW NW NE, Section 14-20-10, at 730 feet. Grimes & Gillespie had a rig up for No. 7, CEL SE SW, Section 31-21-12.

Calvin & Belt finished a 25-bbl. producer in the Osage just northwest of Tulsa. It was their No. 6, C W half SW SE, Section 5-20-11, and the sand record was 2,383-2,426 feet. Grimes & Gillespie's No. 9, CSL NE Section 6-20-12, was a 10-bbl. well in the Wilcox at 2,132-33 feet. The Winona Oil Co's. No. 4, C SE NE, Section 29-20-12, made 1,500 bbls. natural from sand at 1,996-2,004 feet. Gravity of the crude tested 37.8 degrees.

Pawnee County

A few small wells and a couple of dry holes featured the week's operations in Pawnee County. R. E. Freeman's No. 2, SE cor. NE NW, Section 17-21-17, was dry and abandoned at 3,105 feet. Turner and others had a rig up for No. 1 Carter, SW cor. Section 23-21-7. The Mid-Continent Petroleum Corp. shot its No. 5, SW cor. Section 36-21-7, with 60 quarts and the result was a 6-bbl. well in the Skinner sand at 2,312-30 feet with total depth 2,346 feet. The same company's No. 8, C SE SW SW, Section 36-21-7, was dry and abandoned at 2,825 feet.

The Magnolia Petroleum Co. was rigging up to deepen its old well, No. 2 Lesher, SE cor. NE NE, Section 21-20-6, old depth 3,060 feet.

J. B. Grieves was drilling at 1,140 feet in his No. 2-A, SW cor NE SW, Section 31-21-8. The Tidal Oil Co's. No. 2, CNL SW NE, Section 35-21-8, was good for 3 bbls. after a 50-quart shot in sand at 2,385-2,463 feet, total depth 3,024 feet, and plugged back to 2,700 feet.

W. A. McCable is deepening his No. 1, NE cor. SW SW, Section 4-20-7, which was bottomed at 2,710 feet, and may go to the Wilcox horizon.

The Tidal Oil Co. was deepening its No. 3 Arnold, SE cor SW, Section 3-20-8. Its original total depth was 2,468 feet and was drilling below 2,510 feet. The Minnehoma Oil Co.'s No. 4, SE cor. NE NW, Section 7-20-8, was drilling at 950 feet.

The Magnolia Petroleum Co. was building rig for No. 1 Mewell, C NW NW SW, Section 2-20-6. The Champlin Refining Co. was drilling at 550 feet in its No. 1, C SW SW, Section 19-20-6, and the Josey Oil Co. was building a rig in the C SW SE, Section 21-20-6, for its No. 5 Embry. The latter company's No. 1, C SW NW NW, Section 22-20-6, was cleaning out with a 10-bbl. showing at 3,093-95 feet, and No. 2, NW cor. Section 22, was also cleaning out, having a 20-bbl. showing at 3,095-3,112 feet.

The Magnolia Petroleum Co's. No. 1 C NE NE NE, Section 36-23-4, is a 5-bbl. pumper in sand at 2,935-44 feet.

Rich and others abandoned their No. 1 Ackerman, C. NW NW SW, Section 3-22-5, as dry at 3,815 feet.

The Prairie Oil & Gas Co's. No. 2 Donahue, CNL NW SW, Section 15-20-6, was rigging up to deepen, old depth being 3,096 feet.

Payne County

In the Ingalls Pool the Roxana Petroleum Corp. has built the rig for No. 4 Stover, SW cor SE SW, Section 13-19-4; and also for No. 5 Stover NE cor. SW SW, Section 13-19-4. Magnolia Petroleum Co. has the rig up for No. 1 Bright SE cor. NE NE, Section 14-19-4.

In Payne County, about 10 miles west of Cushing, the M. T. C. Oil Co. had a rig on the ground for No. 2 Waltman, C NE SE NW, Section 26-18-3.

The Producers & Refiners Corp. was rigging up a twin well, No. 2-A Goss, C SE SE SW, Section 7-18-5.

Blauner & Hartley's No. 1-A, C NW NW NW, Section 2-18-6, had a 25-bbl. showing in sand at 2,892-2,917 feet, with total depth 3,452 feet. It was shot with 60 quarts. The Consolidated Drilling Co. was drilling its No. 2, CEL SW NE, Section 8-18-6, at 916 feet.

The Twin State Oil Co's. No. 2, C NW SE NW, Section 14-19-5, was spudded. The Texas Co. dropped the 5-inch in its No. 1, C NE NW NE, Section 17-19-5, and abandoned the hole at 3,915 feet.

Just southwest of Cushing, the Mulberry Oil Co. deepened an old well, No. 1, C NW NW, Section 5-17-4, and completed it for 11,500,000 feet of gas in sand at 1,940-44 feet.

Creek County

B. C. Redgraves and others shut down their No. 1, CWL NW SE, Section 15-18-11, at 160 feet for a water pump.

B. E. Kennedy and others shot their No. 4, CEL NE NW, Section 6-18-12. with 20 quarts in the Wilcox sand at 2,019-45 feet and swabbed 160 bbls. of 33.5 gravity oil.

The Industrial Oil & Gas Co's. No. 2, CWL NW SE NW, Section 6-18-12. was drilling at 620 feet. The Munn Brothers completed a 75-bbl. well as a result of a 60-quart shot in their No. 2. CNL NW NE NW, Section 6-18-12.

Bristow District

In the Bristow region the Margay O l Co. has a failure in No. 1 SW cor. NE SE, Section 4-16-8, which is abandoned at 3,715 feet. Terrel Oil Co.'s No. 2, NE cor. SE, Section 8-18-11, is dry and abandoned at 2,100 feet. B. C. Redgraves and others have spudded No. 1 Snow CWL NW SE, Section 15-18-11. B. E. Kennedy and others have completed No. 4 CEL NE NW, Section 6-18-12. Sand was 2,019-2,039 feet and the well is swabbing 160 bbls. Industrial Oil & Gas Co. is drilling at 450 feet in No. 1-A, NW cor. SE NW, Section 6-18-12, and the location is made for No. 2 Sargo CWL NW SE NW, Section 6-18-12. M. O. Evans and others are drilling at 700 feet in No. 1 SE cor. NW, Section 7-17-11. C. M. Ireland has a machine in for No. 6 Freeman CNL NW SE, Section 8-17-11. McClung and others have a dry hole in No. 1 CWL SW NW, Section 27-17-11, which is abandoned at 1,875 feet.

In the Mounds region, Hilt and others are shut down at 2,253 feet in No. 3 CWL NE SE, Section 7-16-12.

C. G. Tibbens has completed No. 17 CWL NE SW, Section 30-15-9. Sand was 2,233-2,289 feet and the well is making 15 bbls. after a shot of 120 quarts. No. 20 CSL NE SE NW, Section 30-15-9, had sand 1,223-1,258 feet and is now making 125 bbls. after a shot of 170 quarts; No. 22, SW cor. NE, Section 30-15-9, is drilling at 750 feet, and No. 25 C NE SW, Section 30-15-9, is drilling at 450 feet. No. 26 CWL NW NW SE, Section 30-15-9, is spudded.

In the Hall-Donnelly Pool the Independent Oil & Gas Co. has built the rig for No. 1 Bear SW cor. NW, Section 29-14-10. The Texas Co. is building the rig for No. 1 Bear SW cor. NW SW, Section 29-14-10. Prairie Oil & Gas Co. has the rig on the ground for No. 1 Samuels SE cor. NE, Section 30-14-10. Wood Oil Co. has built a rig for No. 2 Hoffman, SE cor. NE SE, Section 30-14-10. Empire Gas & Fuel Co. is drilling at 1,100 feet in No. 2 SE cor. NW NW, Section 32-14-10.

In the Jennings district, along the north line of the county, Mann & Smith were building a rig for No. 1 McElroy, SE cor. NE, Section 6-19-8. East of this, in the same township, the Gled Oil Co. had a 50-bbl. showing in its No. 2, CSL SW NW NW, Section 13-19-8, in sand at 2,876-88 feet. Three new tests in the same section are: The Texas Co's. No. 1, SW cor. SE, drilling at 190 feet; Burlingame & Sharp's No. 4 Peters, CNL NW SW NW, timbers on the ground; and the Gled Oil Co's. No. 1, SW cor. NW NW, rigging up to deepen at old total depth of 2,385 feet.

The Little Gem Oil Co. was spudding its No. 25 Atkins, NE cor. SW NE, Section 5-18-7. The Riverside Oil Co. was drilling at 1,400 feet in its No. 1, C SW SE SW, Section 6-18-7.

The Pure Oil Co's. No. 1, NE cor SE, Section 12-18-8, was drilling below 200 feet.

C. L. McMahon's No. 1, NW cor. Section 10-19-9, was shot with 20 and 30 quarts in sand at 2,725-35 feet and responded with only 15 bbls. of 38.1 gravity oil. The Roxana Petroleum Corp's. No. 1 Sewell, NW cor SW NE, Section 18-19-9, was drilling deeper at 2,474 feet, old total depth having been 2,442 feet. The Kingwood Oil Co's. No. 1 SE cor. NE NE, Section 30-19-9, was drilling below 200 feet.

H. W. Skelly had a rig up for his No. 1, C NW SE SW, Section 15-19-7.

Gibson & Baker spudded their No. 1-A, C NE NW SW, Section 17-17-7.

Frank Billingslea spudded his No. 1 Bruner, C SE SE SE, Section 17-17-8. The Waite Phillips Co. was drilling its No. 2, NW cor. SW, Section 26-17-8, at 150 feet, and had a rig built for No. 3, NW cor. SW SW, same section; also a rig was up for No. 4, SW cor. Section 26.

The Barnsdall Oil Corp's. No. 3, NW cor. NE SE, Section 27-17-8, made 1,562 bbls. the first 24 hours from sand at 3,128-31 feet. No. 2 swabbed only 47 bbls. from broken sand at 3,190-3,201 feet and was to be shot. It is in the NE cor. SE SE, same section.

The H. F. Wilcox Oil & Gas Co. was cleaning out to deepen an old well, No. 9 Heneca, NW cor SW NE, Section 2-15-8. Old total depth was 3,157 feet. F. L. Moir and others were building a rig for No. 1 Holloway, SE cor. SW SW, Section 19-15-8.

The Skelly Oil Co. completed its No. 12, SE cor. NW SE, Section 12-14-8, getting a 25-bbl. well after a shot of 100 quarts in sand at 2,367-2,410 feet. C. G. Tibbens also completed his No. 6, NW cor. NE SE, same section, shooting it with 120 quarts and getting a 120-bbl. well. It had made 90 bbls. natural from sand at 2,364-2,412 feet. He had a rig built for No. 8 Bruner, C NW SE SE, same section.

The Winona Oil Co's. No. 1-A, NW cor. SW NE, Section 17-18-9, was abandoned at 3,256 feet. J. A. Hull Co. completed No. 1, SW cor. Section 21-

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CARTER OIL CO. TO DRILL DEEPER KINGMAN COUNTY, KANS., WILDCAT

By C. D. Lockwood

The past week in the Kansas fields was quiet, with few developments of an unusually important nature. The status of the D. P. Fleeger and Carter Oil Co.'s wildcat in Kingman County has not changed materially except that Fleeger is vacating the property in favor of the Carter drillers who are taking over control of the well and intend to drill it deeper. This is one of the most interesting and important wildcats in the State and would probably make a fairly good producer on the pump even though it is considered an edge well, and its deepening will be watched with interest.

In the Oswald Pool of Russell County, the H. F. Wilcox-Russell Oil Co.'s No. 1 E. C. Munsell, NW cor. SE of Section 17-12-15w, was making 8 bbls. an hour from sand at 2,996 feet, drilled 7 feet in. Same company's No. 15, NE cor. SW NE, same section, which found the upper pay about two weeks ago at 2,986 feet was deepened 98 feet and was good for 10 bbls. an hour. No. 2 E. C. Munsell, 660 feet south of No. 1 is a new location, and another has been staked a location west of the No. 1 E. C. Munsell. The Wilcox-Russell Co.'s No. 17 Oswald-Wilcox, in the SW cor. NE NE of Section 17 and No. 18, one location south of No. 17, are rigging up.

Lyon County

Northeast of Emporia in Lyon County, Able and others were drilling their No. 1, C NW SW SW, Section 22-18-12, at 900 feet.

The shoestring pools of Greenwood County continue to lead the State in activity. In the Scott Pool of the "Little Golden Lane," the Greenland Oil Co. completed its No. 10, C SE SE SW, Section 24-23-8, for 35 bbls after a 50-quart shot in sand at 2,536-66 feet. The same company and Phillip's No. 7 C SE NW SW, Section 25-23-8, was good for 150 bbls. following a shot of 40 quarts in sand at 2,495-2,522 feet, first oil at 2,505 feet. In the same section, the Manhattan O l Co. had rigs on the ground for Nos. 11 Scott, C SE NW NE, and No. 12 Scott, C NE SW NE.

The Phillips Petroleum Co's. No. 2 C SE NE SE, Section 26-23-8, was shot with 60 quarts and made 50 bbls. afterward. Sand found at 2,504-20 feet put only 1,000 feet of oil in the hole natural. The company's No. 3, C NE NE SE, same section, was spudded.

The Manhattan Oil Co. was building a rig for No. 22 Green, C SE SE SE, Section 10-23-9. Sheedy had a rig under construction for No. 2 Green, C NE NE NE, Section 15-23-9. The Empire Gas & Fuel Co's. No. 32, C NE SE NW, Section 16-23-9, was completed with a shot of 180 quarts in sand at 2,400-75 feet, first oil at 2,432 feet, and responded with 75 bbls.

Two dusters were finished up east of the Pixlee Pool, by the Tidal Oil Co. & Jones No. 1, C NE NE NW, Section 3-22-10, was dry and abandoned at 2,206 feet, and No. 2, C NW NE NW, same section, was plugged at 2,234 feet.

Pixlee Pool

In the Pixlee Pool, the Empire Gas & Fuel Co's. No. 4, C SW NE NW, Section 6-22-10, was a 150-bbl. well after an 80-quart shot in sand at 2,204-21 feet. The same company had a rig up for No. 5, C NE NW NW, and also for No. 6, C NE SE NW, same section. The Mississippi Valley Oil Co. was rigging up its

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Cole Gas Field Well Is Disappointing

Houston Co.'s Offset to Cin-Tex Discovery Fails to Flow. Piedras Pintas Test Drilled in May Have to Be Deepened

By B. D. Stevenson

SAN ANTONIO, Tex., Mar. 22.—Houston Oil Co.'s well in the Cole gas field in Duval County, offsetting the Cin-Tex Petroleum Co.'s oil well, was bailed last Thursday and up to a late hour as this was written had failed to make a flowing well. It was swabbing at the rate of several hundred barrels of oil a day and it was hoped that with continued swabbing it might be developed into a bigger well. In comparison with the Cin-Tex discovery well which came in with a solid 6-inch stream of oil against the crown block, maintained for some minutes until it was turned off, the Houston well which is a 300-foot offset is somewhat disappointing. Cin-Tex's discovery well came in February 10 but was turned off and remained closed in until additional storage could be built and sufficient pipe was on the ground for a pipe line. It was turned on the second time March 13 and made at the rate of 105 bbls. an hour through a 1¼-inch choker and in three days had dropped to 40 bbls. an hour and was showing gas. The No. 2 of the Benevides which was drilled while the No. 1 was waiting for storage was drilled in and bailed also on March 13 and developed a gasser spraying oil.

Previous to the bringing in of these two wells on March 13, three other wells had been brought in. Killam-Secord brought in two gassers, one a quarter and the other a half-mile south, and Moody-Seagraves brought in a gasser a half-mile north. Thursday of last week Houston Oil Co. brought in its well and in spite of big gas wells at the same depth to the west gauging 40,000,000 feet and more, the Houston Oil Co. well failed to flow though it was estimated that it will make a good well. The Cin-Tex discovery well is in the east edge of the Cole gas field which consists of several producing gas wells at around 1,750 feet deep that are supplying gas to the Southern Gas Co.'s line to San Antonio. Houston Oil Co.'s well is a southeast offset to the Cin-Tex No. 1, or discovery well. Houston Oil Co. soon after the bringing in of the Cin-Tex Petroleum Co.'s well on the northwest half of Block 16 of Section 10, purchased the oil lease on a considerable block of acreage including 200 acres close in to the Cin-Tex well from the Cole Petroleum Co. from whom it had previously bought the gas under several thousand acres of the Cole Petroleum Co. block. To the east for more than a mile is undrilled territory and operators are expecting that the pool will be found farther to the east.

Piedras Pintas

Moody-Seagraves and William F. Morgan's No. 1 Walsh in the Piedras Pintas salt dome field in Duval County at Noleda was drilled in and bailed with casing set at 3,404 feet and the hole drilled 20 feet below that. Bailing started last Thursday and the well failed to respond. It is the first well in the area to be tested since the Humble Oil Co.'s No. 4 Walsh discovered the pool at a depth of 3,623 feet. The Moody well is thus 219 feet shallower than the discovery well and is about 500 feet west and a little south of the discovery well and in the direction of what is supposed to be the center of the dome. It had been showing considerable gas and some showings of oil but may not have reached the sand now producing in the discovery well. Humble's No. 4 Walsh has been fluctuating in production flowing and pumping all the way from 400 bbls. up to 1,420 and is now making about 1,000 bbls. a day.

Humble's No. 5 Walsh, located 450 feet southeast of its discovery well has set and cemented casing at 3,550 feet ready for a test. Both this well and the Moody-Seagraves well to the west of the discovery well have been feeling their way ahead very carefully for the last few hundred feet fearing to find the production at a different depth than in the discovery well. Magnolia Petroleum Co.'s No. 1 Speer on Survey 185, a half-mile or so northwest of the discovery well, is drilling at 1,832 feet. J. K. Hughes' No. 1 Peters, located 1,800 feet north of the discovery well is drilling at 1,560 feet. Grayburg Oil Co.'s No. 1 Halff, located 1 mile north of the discovery well is drilling at 2,172 feet. Humble Oil & Refining Co.'s No. 4 Schallert, a little less than 4 miles northwest of the discovery well and on the Palangano salt dome, is drilling at 2,335 feet. Other wells have gone into the salt plug at from 800 to 1,800 feet in that area. Simms Oil Co. has lately secured the leases of the National Oil Co. which drilled several wells in the area of the Palangano salt dome and have made a location for a test and ordered up a derrick. National Oil Co. secured the block of leases from Sinclair after Sinclair had drilled a number of dry holes

H. A. Speer with a light rig is making a test to find a sulphur bed on the Lizzie Singer tract in Survey No. 4 off to the northwest of the Humble's No. 4 Walsh over 2 miles and Duggan and Maurer have the derrick up and will rig up as soon as possible on Survey 123 on the Willie Hoffman tract, 8 or 9 miles northwest of the No. 4 Walsh.

Humble Oil & Refining Co.'s No. 1 Hagrist in the northern edge of Duval County, has set and cemented casing at 2,224 feet where it was 5 feet into a sand showing oil. J. T. Graham's No. 1 Beall in northeastern Duval and 12 miles north of San Diego, the county seat, is drilling at below 1,100 feet.

Cole Gas Field

Near the Cole gas field in Duval, Simms Oil Co. is drilling at close to 1,800 feet in the test on the Bennett ranch on Survey 37, 6 miles northeast of the Cole gas field. Cole Petroleum Co. is drilling the No. 17 Arispe on Block 13 of Section 11, about a quarter of a mile south of the Cin-Tex discovery oil well and is ready to set casing. It will probably be the next well tested. Cole has secured permits to drill Nos. 18 and 19 on the same 40-acre block and also have secured a permit to drill No. 14 Arispe on Block 14 of Section 12, over 1¼ miles to the southwest. Keeling is setting up for a test west of the Cin-Tex well. Killam is nearly down to the pay level on Block 9 of Section 10, next northwest from the Cin-Tex well. Sun Oil Co. has the derrick up but has not spudded in as previously reported on Block 15 of Section 11, a half-mile southwest of Cin-Tex's well. Over the line in Webb County, 2 miles to the northwest, Cole Petroleum Co. on Section 3, Block 5, which tested March 1 at 2,636 feet and got salt water, has set for another test at 2,780 and is said to have a good looking core.

Bastrop County

George W. Lyle, of Dallas, has made the location for his Cedar Creek wildcat test near the test drilled a year or more ago by the Dixie Co. The rig will be moved from the Spooner test, drilled by Lyle, to the east of the new location. The old Dixie well, completed in August, 1924, topped the Edwards lime at 2,465 feet and stopped drilling at 2,600 feet, and has been seeping a little oil and gas ever since. Frank M. Dent is preparing to resume drilling at 1,037 feet in No. 2 Kraulick, in the southeastern part of Bastrop County. It has been shut down since June, 1925. Andrews Petroleum Co. is drilling No. 1 Brundage, east of Elgin, in northern Bastrop County, at about 2,700 feet. Kennon & Turner have started No. 4 Schuerman in the little shallow field a few miles southwest of Elgin.

Bee County

W. G. Clark is waiting for the roads to dry to move the rig from his No. 1 Scott, 5 miles north of Beeville, in Bee County, to a new location farther to the northeast, on the same ranch, and will drill again. Moody-Seagraves are still working with the W. E. Clark No. 1 Welder, 3 miles east of Beeville, and have not given up making a gas well of it. The block of acreage was got together by W. E. Clark and he has announced he will drill another test on his block. A block of acreage is being assembled for a test in the northwestern part of the county.

Caldwell County

Murchison & Fain are waiting to finish No. 1 Burdette Townsite, now drilling below 2,200 feet, and which has not lately looked encouraging before moving to the location south of Dale and 1½ miles north of the Reiter-Foster No. 1 Brown. The test will be on the A. J. Miers farm. Sun Oil Co. is preparing to move in to drill No. 1 J. M. Cardwell, a wildcat test, a few miles north of the town of Lockhart. Reiter-Foster Oil Corp. has the derrick up for the wildcat test on the J. W. Gomillion tract, north of the Lytton Springs Field. Reiter-Foster has nearly completed the Brown test, south of Dale, to the depth of 100 feet into the Edwards, the contract depth. It will not be drilled deeper.

Jim Wells County

Pittsburg Oil Development Co. (Benedum & Trees) is waiting on roads to dry to move on test on Gallagher farm, south of Sandia.

Karnes County

Earl B. Reynolds has been successful in fishing out some of the tools lost in No. 1 Butler, in Karnes County, and expects to have the hole clear and ready to test the coming week.

Live Oak County

Glasco and others' No. 4 Tips-Rogers, 1 mile west of Three Rivers, is drilling at 674 feet, having passed up the 630-foot gas sand in which Nos. 2 and 3 Tips-Rogers were completed. No. 4 will try to make an oil well at about 800 feet. W. J. Walton is drilling on No. 2 Odem, 1,000 feet northeast of No. 1, abandoned at 1,374 feet. George B. Pickett is drilling at around 550 feet in No. 2 West.

Medina County

California-Medina Oil Co. is drilling below 3,000 feet in black lime formation, identified as the Pennsylvanian. Cecil Switzer, of Shawnee, Okla., has acquired the interest of Mr. Odell in No. 1 Zerr, east of D'Hanis and north of the Southern Pacific Railroad, which has been standing at 1,112 feet for over a year, and will complete the test to 1,900 feet. In the Hondo shallow field, 4 miles south of Hondo, Medina Oil Co., which completed No. 2 Taylor to 315 feet, where it had a small oil well, carried it down to 380 feet, hoping to get as big production as in No. 1 Taylor, the discovery well, which has been producing from 356 feet. No. 2 failed to find additional pay and was put back on the pump at 315 feet, but is now being deepened again. Quite a number of light spudding machines have been moved into the area in hopes of picking up the shallow sand, which has been

(Continued on Page 116)

LITTLE ACTIVITY IN EAST CENTRAL TEXAS WITH PRODUCTION DECLINING

By Special Correspondent

CORSICANA, Tex., Mar. 19.—The East Central Texas Field is one of the dullest of oil regions, outside of the daily routine of producing oil in the Mexia, Powell, Currie, Wortham and Richland Pools, where the output is slowly but steadily falling off in the absence of any new production. A number of recent dry holes are reported and there is a little scattered wildcat activity in the big area which makes up this territory.

In Anderson County, the Navarro Oil Co's. No. 1 Greenwood, on the Cook survey, found salt water at 1,355 feet and drilled to 1,363 feet and was plugging back to 571 feet to make a test.

In Cherokee County, the Collington Drilling Co's. No. 3 Clasp, Jewell survey, was last reported at 2,300 feet, drilling in sticky shale.

In Ellis County, the Simms Oil Co. was drilling below 1,725 feet in No. 1 Griffiths, De La Pena survey.

No drilling activity is reported in Falls, Freestone, Henderson, Hill or Hopkins County, although there are tests started in all of them. In Falls County Heflin and others drilled to 3,003 feet and shut down on No. Keeley, Basquez survey. The High Banks Oil Co. has been shut down a long time on No. 1 Peacock, Pierson survey, total depth given as 3,090 feet. In Hill County the Eagle Drilling Co. shut down at 1,237 feet in No. 1 Jones, B. B. B. & C. Survey. No change was reported in any other tests in these counties.

In Hunt County the Rycade Petroleum Co's. No. 1 Holden, McAdams survey, was abandoned as dry at 3,200 feet. The same company will drill a test No. 1 Robinson, Rush survey in the same county. The Gulf Production Co's. No. 1 Hicks, Bordine survey, which was dry in the first and second Woodbine sands, was at a total depth of 3,911 feet, swedging 10-inch casing to stop a caving condition.

Very little is doing in Limestone County. The Transcontinental Oil Co. was reported coring at 2,140 feet in No. Rose, Varela survey. Reiter, & Foster and Lucas & Lewis' No. 1 DeLong Varela survey, was at a total depth of 2,250 feet, with a fishing job. Morley & Morley after drilling to 4,160 feet, decided to test a sand at 1,800 feet, but the well was shut down when last heard from.

In Milam County Foster & Reiter Corp. and Simms Oil Co's No. 1 McKinney, Tyler survey, was abandoned as dry at 3,618 feet.

In Navarro County Penn & Windsor abandoned their test on the Burke farm, Van Horn survey, at 3,337 feet. DeArmond and others made a location for No. 1 Elliott, Autry survey, Dixon and others completed a 10-bbl well in No. 1 Tucker, Boren survey, Currie district, in sandy shale at 350-68 feet. The Home Okla Oil Co's. No. 5 McGaw, Smith heirs survey, was dry and abandoned at 3,235 feet. Other tests in the county were shut down.

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Boling Dome Puzzles Coastal Oil Men

Different From Anything Previously Discovered in That Area. Lockport, La., Field Again Extended

By P. L. McGreal

HOUSTON, Tex., Mar. 22.—The Boling Pool in the southeastern part of Wharton County, is a hectic spot and remains a puzzle to those interested in it. The Lockport district in Calcasieu Parish, Louisiana, was again extended last week when the Vacuum-Gulf's No. 2 Bordages came in at 3,780 feet, flowing 700 bbls. of fluid, 500 bbls. oil and 200 bbls. water Late in the week the well had settled down to 200 bbls. of oil. It is about 2,000 feet northwest from production. A week ago the same interests extended the productive area 2,000 feet southeast with No. 2 Friedberg and Wolf, an 800-bbl. well.

Reverting to the Boling Pool, which is the interesting development at this time, four wells were completed there this week. Two were producers with a total of 950 bbls. initial new production and two were gassers. The Texas Co. finished No. 6 Taylor at 3,107 feet with an initial flow of 750 bbls., which later settled down to 640 bbls. per day. The Oxford Oil Co.'s No. 1 Floyd came in at 2,845 feet, making 200 bbls. of 36.2 gravity oil. It is now averaging 55 bbls with the temperature 62 degrees. According to The Texas Co.'s schedule of prices placing Boling crude on a Mid-Continent basis, the product of the Oxford Co.'s well is worth $2.04 per barrel.

Boling Dome a Puzzle

Operators are not as optimistic as they were regarding the future of the pool. It is different from anything in the previous history of the Coastal region. The defined salt area to date shows the dome to be about 3 8/10 miles across from north to south and some 2 9/10 miles from east to west. Late surveys based on formation tests throw the salt area for a considerable distance east of the East San Bernard River. The production developed to date is on the northwest flank of the dome and at varying depths. There is a tremendous gas pressure. The oil is found in a sandy shale formation and varies in gravity from the usual Coastal grade to 36.2.

Wells producing at the close of the week were as follows: The Texas Co.'s No. 4 Taylor, flowing 2,500 bbls.; No. 6 Taylor, heading 640 bbls.; Atlantic Oil Production Co.'s No. 1 Taylor, 500 bbls.; Sun Oil Co.'s No. 1 Taylor, 75 bbls.; Oxford Oil Co.'s No. 1 Floyd, 55 bbls

The Texas Co. is working over No. 3 Taylor, the discovery well, which sanded and quit flowing. The Sinclair Oil & Gas Co. is doing the same with its No. 1 Taylor, which came in last week with initial flow of 1,000 bbls. and much gas and quickly sanded. The Atlantic Oil Producing Co. is trying to restore its No. 2 Taylor.

The Humble Oil & Refining Co.'s No 1 Hawes is a dry gas well at 2,888 feet and the Sun Oil Co.'s No. 2 Taylor is also a gasser at 2,966 feet.

The producing wells are confined to a narrow strip along the west side of The Texas Co.'s Taylor 400-acre tract and long, narrow strips on the west of the Taylor held by the Sinclair Oil & Gas Co., Sun Oil Co. and Atlantic Co. The Hawes lease of the Humble Co. and the Oxford Oil Co.'s Floyd acreage are west of the strips.

Interest now centers in the Vacuum Oil Co.'s No. 1 Hooper, south of the Hawes and the hope is expressed that it is far enough off the salt to find a real sand.

Hundreds of thousands of dollars have been expended for leases about the Boling Dome and thousands more for royalties, so that the landowners have been greatly benefited by the boom. The extent of the salt area is a surprise, covering approximately 7,500 acres. The original tests by the Gulf Production Co. were on the Felder 500 acres on the east side of the dome. The Gulf Co. pretty well defined the salt area on that side.

Another test that is being watched closely is Musson and Nelms' No. 1 Bay, more than 1 mile west of the present activity, which is drilling around 885 feet. Since the line presumably marking the salt area has been extended, many operators believe the Bay location is not too far out to find the sand.

Boling Pool

The Texas Co.'s No. 3 Taylor, the discovery well that sanded and quit flowing, was worked over and is waiting for 2½-inch bailer to bail the hole. No. 5 Taylor is drilling around 3,195 feet in gumbo. No. 7 is at 3,130 feet in gumbo and No. 8 is rigging up.

The Atlantic Oil Producing Co.'s No 2 Taylor is around 2,915 feet drilling in gumbo and No. 3 is in shale at 2,816 feet. No. 4 Taylor is drilling in shale at 1,749 feet with a location made for No. 5.

The Sinclair Oil & Gas Co.'s No. 2 Taylor is setting 6¼-inch casing at 3,024 feet and No. 3 is at 2,185 feet in gumbo. No. 5 is at 775 feet, milling the 12½-inch casing. No. 6 is a location. The Sun Oil Co.'s No. 2 Taylor is idle. No 3 is drilling around 2,235 feet in gumbo and No. 4 is around 2,190 feet in sand rock. A derrick is standing for No. 6 with locations made for Nos. 7, 8, 9, 10 and 11. The Humble Oil & Refining Co.'s No. 2 Hawes is drilling around 1,455 feet. No. 3 is rigging. No. 4 is idle. It is an offset to the Oxford Oil Co.'s No. 1. No. 5 is drilling in sand rock and No. 6 in gumbo.

The Oxford Oil Co. and R. E. Brooks Jr.'s joint No. 2 Floyd is around 678 feet with a derrick up for No. 3 Floyd The Vacuum Oil Co.'s No. 1 Hooper is drilling around 2,824 feet in gas sand A derrick is standing for No. 2. J. K Hughes Co. is rigging No. 1 Mullins Musson and others' No. 1 Bay is at 885 feet. Woodbine's No. 1 is hauling mud, with the depth of hole at 478 feet.

Approximately 65 acres would cover the actual producing area developed to date since the first well came in December 14 last.

The Sinclair Pipe Line Co. of Texas has prepared to extend its pipe line from Damon Mound west to the Boling Pool, a distance of 12 miles. Part of the pipe has been strung and additional steel tanks erected at Damon Mound.

Daily Average Production

The estimated daily average gross production of the Coastal pools for the week ending March 20 is placed at 96,485 bbls., an increase of 730 bbls. compared with last week.

The following table gives the estimate for each pool:

Pool—	Gross Bbls.
Boling	3,770
Batson	1,465
Blue Ridge	660
Barber Hill	110
Big Creek	1,305
Dayton	60
Damon Mound	910
Edgerly, (La.)	1,025
Goose Creek	9,850
Humble	4,800
Hull	18,050
High Island	150
Jennings, (La.)	1,060
Lockport, (La.)	3,230
Markham	75
Nash	300
Orchard	250
Orange	14,075
Pierce Junction	1,600
Piedras Pintas	1,400
Spindletop	2,670
Saratoga	1,380
Sour Lake	4,625
South Liberty	7,150
Vinton, (La.)	6,600
Welsh-Anse La Bute (La.)	80
West Columbia	9,625
Miscellaneous	130
Total	96,405

Southwest Fields

The estimated daily average gross production for the Southwest fields for the week of March 20 is 39,810 bbls., an increase of 605 bbls. over the previous week. The increase came from the Luling Field.

The estimate for each field is as follows:

Field—	Gross Bbls.
Luling	22,600
Laredo	3,375
Somerset	2,225
Calliham	230
Rockdale-Minerva	340
Jim Hogg County	3,140
Lockhart, (Lytton Springs)	7,300
Total	39,810
Grand total for week	136,215
Grand total for last week	134,880
Net increase	1,335

Completions During Week

A total of 20 wells were completed in the Coastal region during the week, of which 4 were dry, 2 salt water and 2 gassers, leaving 12 producers. The new production aggregates 2,345 bbls. Seven wells were bailing at the close of the week.

The action of The Texas Co. some time ago in placing some of the Boling, Spindletop and Sour Lake production on a Mid-Continent gravity basis, followed by that of the Humble Oil & Refining Co. in grading "B" Coastal crude on a gravity basis, places the Gulf Coast Belt nearer on a parity with the other producing sections of the country. Modern processes of refining by cracking and high pressure stills make it possible now to secure a fair percentage of gasoline from the low gravity crudes, or even fuel oils, or what were formerly classed as fuel oils. The crudes placed on a gravity basis contain a high percentage of gas oil, which now can be rerun into motor oil.

The Coastal crude graded as "A" contains a large lubricating content and the production of that grade is becoming scare. An advance in the price of that grade is anticipated.

Other Completions

In the Batson Pool in Hardin County, the Navarro Oil Co.'s No. 1 Autry was abandoned at 4,260 feet. It is in the deep sand extension on the northwest side.

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FOURTEEN COMPLETIONS IN MEXICO; FIVE PRODUCERS AND 6,400 BARRELS

By George Blardone

Mexican Bureau, The Oil and Gas Journal

TAMPICO, Méx., Mar. 19.—Some 14 completions were made in Mexican fields the past week, of which five, with new potential production of 6,400 bbls., can be placed in the production class. The best well of the week was in the Piedras sector of the old Panuco Field. Credito Petrolero's No. 6 there coming in at the shallow depth of 1,676 feet, rated good for 5,000 bbls. Mexican Gulf Oil Co.'s No. 19 Lopez, another old Panuco location, is for 250 bbls. at 1,578 feet. Transcontinental Petroleum Co.'s No. 269, Lot 4 Cacalilao, is in for 200 bbls. at 1,445 feet, a shallow well. Up in Ebano, Mexican Petroleum Co.'s No. 65 La Dicha, drilled 2,360 feet, is good for 900 bbls. from an upper stratum with tubing and packer set.

In the south fields, Transcontinental Petroleum Co.'s No. 1, Lot 16 Zacamixtle, is rated 50 bbls. at 2,331 feet.

The Failures

The failures were all confined to the northern fields: Martin Head's No. 10 Piedras is a duster at 2,150 feet; Mexican Sinclair Petroleum Corp.'s No. 15 Tananturo is the same at 1,900 feet; and No. 72, Lot 3 Cacalilao, drilled into salt water 2,201 feet. Tampascos Oil Co.'s No. 14 Robles is a duster at 1,840 feet. Transcontinental Petroleum Co.'s No. 167 Lot 4 Cacalilao, is a failure at 2,230 feet, and No. 8 Piedras is the same at 2,000 feet. Up in the Ebano sector, Mexican Petroleum Co.'s Nos. 1 and 4 Silva both finished for dusters at 2,425 feet and 2,295 feet.

In the Topila district, D. A. Williamson's No. 9 Lot 5 Pac. de Aguacate is a failure at 2,372 feet.

In the South Fields the Agwi Co. is once more preparing to drill in the Tamiahua Lagoon and is erecting derrick for its No. 41. Huasteca Petroleum Co.'s No. 65 Cerro Azul, drilling at 1,230 feet in hard gray shale and shells; No. 75, same place, drilling in blue clay at 70 feet; No. 58, Tierra Blanca, drilling at 2,212 feet in hard gray lime; No. 60, same place, waiting for orders at 2,086 feet in gray lime; No. 63, same place, drilling at 475 feet in brown shale; No. 64, same place, drilling at 300 feet in brown shale; No. 67, same place, drilling at 405 feet in blue shale; No. 16, Casiano, drilling at 1,240 feet in shale and gumbo. International Petroleum Co.'s No. 7, Agua Nacida, is drilling in sandy shale at 4,385 feet. Mexican Eagle Oil Co.'s No. 26 Alazan, is drilled 2,725 feet in lime and circulating; No. 26 Cerro Viejo is fishing for drill stem at 2,141 feet, in the Tamasopa lime; No. 33, same place, cemented 6-inch at 2,080 feet in gray lime; No. 1, Lot 2, Escobal, is down 2,943 feet in hard black rock; No. 3 Mecatepec, drilling at 2,600 feet in sandstone. Penn Mex Co. is drilling No. 3 La Pita in sandy rock at 3,600 feet.

Northern Fields

In the Panuco-Cacalilao districts of the Northern Fields, Corona Petroleum Co.'s No. 178, Lot 4 Cacalilao, cemented 8-inch at 1,150 feet in lime shells; No. 13-A La Polla is straightening crooked hole at 865 feet in gray shale. Credito Petrolero's No. 1 Piedras, is drilling at 1,700 feet in gray lime, with a show of gas; No. 8, same place, cemented 8-inch at 1,325 feet in gray lime; No. 29, Lot 31, W. Maguabes, drilling in shale at 750 feet. East Coast Oil Co.'s No. 54-A Laguna de la Milpa, drilling in gumbo at 190 feet; No. 57, same place, cemented 8-inch at 1,295 feet in gray lime; No. 458 Ingenio, cemented 8-inch at 1,210 feet in gray lime; No. 230 Halcon, cemented 8-inch at 1,245 feet in gray lime. Empire Gas & Fuel Co. at No. 11, Lot 16 W.

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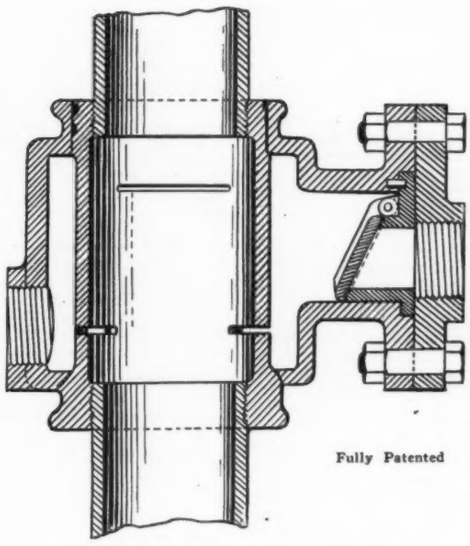

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Inglewood Big Factor in California

Possibility of Deeper Producing Horizon There Causing Some Anxiety Regarding Situation As a Whole

By L. P. Stockman

LOS ANGELES, Calif., Mar. 20.—The decline in California production which has been rather consistent during the past few months was temporarily arrested by the action of the Union and General Petroleum in opening up their curtailed production on the Stearns and Tonner leases in the Fullerton Field, but it is quite probable that the downward trend will be resumed again within the near future and the decline continue unless something of a major character develops in the meantime. This little sentence is somewhat general in character and seems innocent enough if one does not read between the lines. Particular attention is directed to the latter part and in order to be more specific the major development referred to lies in the possible drilling up of the deep zone in the Inglewood Field which has all but been proven to exist.

It is generally recognized that California holds the key to recovery within the industry and, while this is perhaps true, one might go even further and say that operators in the Inglewood Field hold the lock also. The future of the industry for at least another year depends upon the policy adopted by the Standard, Associated, California Petroleum, Shell and Petroleum Securities at Inglewood. So far the volcano has been dormant, but rumbles within seem to indicate an early eruption, although of course it is quite possible that the performance will be held off for a more opportune time. For the present my advice is to keep an ear to the ground as the lava flows fast.

Developments from a drilling standpoint were very satisfactory during the past week, the usual quota of new wells being completed in the Long Beach extension where work has been going on quite steadily for the past several months. The Ventura Avenue Field yielded another flowing well and, while additional completions could be brought in at Midway-Sunset, operators are wisely holding off.

Long Beach

The northwest extension of the Long Beach Field experienced another big week, during which time 10 new wells were finished, good for an aggregate initial daily production of 2,049 bbls. The maximum peak production has already been passed and, although new wells are coming in at the rate of some 10 or 12 each week, they are not having any appreciable effect inasmuch as the output secured has not offset the decline in wells finished previously. It is safe to assume that production in this field will continue to show a downward tendency unless a new deeper and more productive horizon is picked up, which, at the present time, is but a possibility. Something definite along this line, however, will probably develop during the next 30 days as a result of work undertaken by the United Oil Co. This concern is contemplating a conclusive deep test which, it is thought, will get under way within the next week or 10 days.

The most interesting development in the extension this week was the picking up of an oil sand by W. H. Playter in the extreme northeastern part of the field. This well is Playter's No. 3 Cerritos, now being reamed preparatory to landing a water string at 4,330 feet and, although the well is not assured of production, it looks unusually promising. This well for a long time was regarded as having only an outside chance and it will, if commercial production is secured, have the distinction of extending the productive limits of the field several hundred feet to the northeast. The F. M. & S. Syndicate completed its initial producer in the extension early this week but its No. 1 Cerritos, drilled to 4,450 feet and finished with a 4¾-inch liner, was only good for 180 bbls. of 21.9 gravity oil.

The Alexander Anderson survey apparatus used in determining the inclination from vertical was given its pioneer run some time ago by the Pan American Petroleum and it is believed that this highly technical apparatus will be used in another California field within a short time. During the early part of the current week, the Wilshire Oil Co. ran into the drill pipe of the Star Petroleum Co's. No. 2 Colby and it is believed that Anderson will be called upon to determine which of the holes has shown the greatest deviation. The Wilshire's well was down 2,090 feet when it encountered the Star's No. 2 Colby, which was rotating ahead at 2,450 feet. Since the rigs of the two wells are about 50 feet apart, it will be interesting to watch the result of a test to be made in order to determine the deviation of each.

A. J. Delaney added another producing well to his list during the early part of the week when No. 10 Cerritos was given a test from 4,455 feet, the hole being finished with a 4¾-inch liner. The initial production, 345 bbls. of 21.8 gravity, is exceptionally clean. Delaney's No. 16 Cerritos, which came in last week as a gasser, suddenly turned to water and work is already under way toward cleaning out the hole and recementing. Delaney's No. 23 Cerritos, drilled to 4,425 feet, was swabbed in wet and it will likewise be recemented.

Getty Finished Two Wells

George F. Getty finished two wells this week, Nos. 12 and 14, and although the latter was not actually given a test, it is scheduled to be swabbed tomorrow and it is believed that a 250 bbl. well will be brought in. Getty's No. 12 Cerritos, drilled to 4,424 feet and finished with a 6¼-inch liner, was rated at 190 bbls. of 21.2 gravity oil cutting 2 per cent. King Gillette has started constructing a rig for his initial undertaking in the extension and the hole will be spudded in as soon as the necessary preparations have been completed. J. N. Cooper's No. 2 Cerritos, drilled to 4,459 feet and finished with a 4½-inch liner, made 275 bbls. of clean 21.6 gravity oil during the first 24 hours. Cooper has just picked up the pay in No 3 Cerritos at 4,270 feet and a string of 6¼-inch will be landed on bottom. No. 1 finished some time ago, has been off production during the past week but the cleanout job will be finished within the next day or two and the well should be tanking oil shortly thereafter.

E. L. Craigen expects to begin swabbing his No. 2 Cerritos tomorrow and it looks good for around 300 bbls. from 4,430 feet. Craigen's No. 3 Cerritos picked up the pay at 4,266 feet and a string of 8¼-inch has just been landed on bottom. Lewis & Glass finished their initial producer in the extension but the new well, No. 1 Cerritos, was only good for 196 bbls. of 21.5 gravity oil from 4,435 feet. E. J. Miley's No. 1 Cerritos, given a production test at 4,445 feet, and No. 2 Cerritos, finished at 4,444 feet, both proved to be wet and will require further work. The former tanked 210 bbls. of fluid, 40 per cent of which was water, while the latter is rated at 280 bbls. with a 16 per cent cut. The McKeon Oil Co. has just about finished cleaning out No. 6 Cerritos and it will probably be returned to production some time within the next two weeks. No. 7 Cerritos has just been swabbed in wet and it will be recemented at 4,460 feet.

The Retsof Drilling Co.'s No. 79 Cerritos, which was given a preliminary test a short time ago, is now on steady production pumping 50 bbls. of 21.6 gravity oil daily. In the older section of the field the San Martinez Oil Co. finished No. 3 Fry at 4,920 feet but it was only good for 248 bbls. of 24.6 gravity oil daily. This was somewhat of a disappointment but the well will probably show a stable output for some time to come. Number 4-A Booth, which has a penetration of around 1,250 feet, will be given a test from 4,809 feet some time during the next week or ten days. The well which K. S. Deeds finished on top of Signal Hill as a gasser failed to hold up and it is at present making 75 bbls. a day of 23.8 gravity oil.

There was a slight increase in the number of wells, 83, logged below the 4,000-foot level at the close of the present week and, in view of the fact that the number rotating ahead between the 3,000 and 4,000-foot level showed practically no change, it may be said that development work remained in status quo. This tally just made of work in the extension also showed 17 drillers between 2,000 and 3,000 feet and 14 above the 2,000-foot level. This is about the same ratio as has been maintained during the past several weeks and, while the amount of new work started is just about offsetting the completions each week, the maximum amount of work from a development standpoint is already passed.

Rosecrans

The Barnsdall recompleted No. 9 O'Dea in the Rosecrans Field early this week doing 800 bbls. daily and, although the production is cutting approximately 40 per cent water, the output is being run through a trap with satisfactory results. The Barnsdall has, as a result of this recompletion, increased its income from California production quite appreciably and will probably bring in another well or two within the next few months. The very substantial increase in the price paid for Rosecrans crude will affect the company's entire production in this field and its income during the coming year will reflect this boost of from 20 to 44 cents per barrel. The average gravity of the Barnsdall's production will probably run around 34 degrees, the price of which was increased 30 cents a barrel on March 11. The company's income from production in the Rosecrans Field has, therefore, been increased approximately 17½ per cent.

As was expected, the upward revision in the price schedule for crude centered on the lighter gravity oil because of its gasoline content. In view of this revision, it is quite possible that operators in the Rosecrans Field will make strenuous efforts to secure additional production in order to take advantage of the increase announced March 11 and effective March 21 on existing contracts. The Union has not yet undertaken any further work but completion of the various drillers on its Howard Park lease will bring added production to itself and additional payments to the Barnsdall, which company has a production interest in this place. It is quite possible that independent producers in this area will undertake to secure the financial benefits from the recent price increase by redrilling and deepening and installing improved pumping equipment.

Torrance Field

There were two new producers finished in the Torrance Field during the past week but both of them were comparatively small. The Shell Co. started off the week with a 50-bbl. pumper when No. 13 Redondo was given a test at 3,610 feet. The Standard Co. followed suit a short time later when a test was made of well No. 6 on Marble lease No. 2. This well is rated at 55 bbls. of 18.7 gravity oil cutting 10 per cent. The Standard has no further incompleted work in this field but the Shell has two drillers on the Redondo lease, No. 10 at 2,400 feet and No. 11 at 2,620 feet, and a rig going up for No. 9. The Chanslor-Canfield Midway Oil Co. has four drillers on the Del Amo lease but will probably not undertake any additional work until these wells are on production.

Inglewood

Recent developments in the Inglewood Field are causing operators some anxiety because of the possibility of an early development of the deep zone in that area. The wells which are being watched very closely are No. 9 Cone of the Petroleum Securities and No. 1 on Vickers lease No. 3 of the Standard. Both holes have shown indications of resulting in deep production, although neither has yet been given a test. There is no use dodging the issue, as it seems that efforts to hold up deep drilling are likely to prove futile, although the hope of averting another production crisis has not been abandoned.

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total This Week	Daily Average	Total Last Week	Daily Average	This Yr. to Date	Same Time Last Year
Crude oil	357,829	51,118	.....	.....	2,402,552	3,563,319
Fuel and gas oil	214,627	30,661	394,640	56,377	2,020,569	81,539
Gasoline	289,725	41,389	170,508	24,358	1,273,762	894,615
Tops	.....	.....	.....	.....	74,619	80,578
Coastwise—						
Crude oil	648,382	92,626	489,167	69,881	4,646,413	5,475,120
Fuel and gas oil	438,206	62,601	64,509	9,216	1,640,327	2,619,441
Gasoline	150,032	21,433	189,481	27,069	1,423,762	898,031
Kerosene	12,441	1,777	3,750	536	75,696	49,961
Tops	.....	.....	28,716	4,102	126,015	41,010
Exports—						
Crude oil	149,499	21,357	72,176	10,311	775,410	485,171
Fuel and gas oil	291,036	41,577	412,726	58,961	3,434,565	2,730,801
Gasoline	.....	.....	.....	.....	603,445	760,004
Tops	.....	.....	.....	.....	.....	89,932
Kerosene	.....	.....	.....	.....	420,445	255,039
TANKER SHIPMENTS, SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS						
Crude oil	.....	.....	.....	.....	.....	.....
Fuel and gas oil	.....	.....	121,462	17,360	121,462	.....
Gasoline	.....	.....	.....	.....	341,606	332,906
Tops	.....	.....	.....	.....	.....	649,325
Lubricants	.....	.....	.....	.....	82,025	81,939
Coastwise—						
Fuel and gas oil	121,947	17,421	178,540	25,506	852,826	735,105
Gasoline	71,176	10,168	156,709	22,530	748,096	548,515
Kerosene	5,642	806	8,211	1,173	74,855	72,985
Exports—						
Fuel and gas oil	144,811	20,687	27,094	3,871	717,971	336,487
Gasoline	.....	.....	64,880	9,269	246,156	110,695
Kerosene	.....	.....	.....	.....	332,688	217,765
Lubricants	.....	.....	.....	.....	.....	130,620

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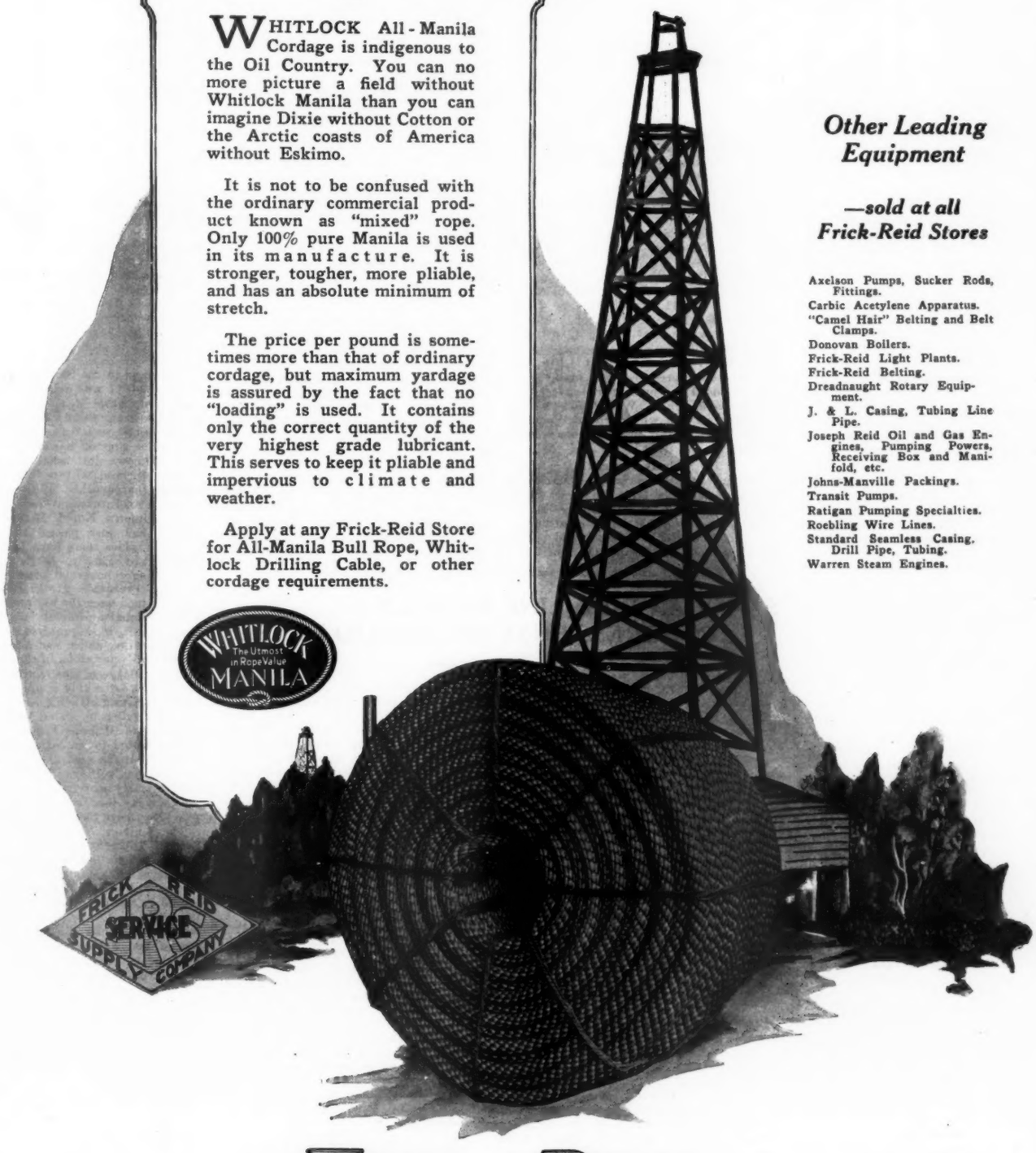

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The existence of a deep and highly productive horizon has not absolutely been proven in this field but it is my personal opinion that one does exist and that the upper zone affords a deeper penetration than wells have heretofore secured. Unless operators in this field use common sense and hold up further deep drilling, I believe that this district will be doing 75,000 bbls. a day within six or eight months, due either to the development of a deeper horizon or the deepening of present producers in order to secure a maximum penetration in the present zone.

Operators in this field are playing with dynamite which may go off at any minute. The Associated, Shell, Pan American and Standard did not waste any time drilling up the present horizon and future work will probably be just as intensive if some one should happen to prove up the existence of a deep zone and begin drawing on it. Work in this district during the next 30 days should be watched very closely because if another drilling orgy is started it will take the petroleum industry another year to recover from its effect and return to normalcy. The Associated, it is understood, is contemplating deepening No. 2 Vickers but this has not been definitely determined. The Golden Flood Oil Co. has listed its No. 1 Sentous, a southern outpost, for abandonment at 3,620 feet due to mechanical trouble and the rather unfavorable outlook.

Huntington Beach

J. C. Theriot, a Long Beach operator, has requested permission of the War Department to drill along the ocean front beyond mean high tide at Huntington Beach and he has posted notices of his intention to drill up a strip two miles long and one mile wide if the necessary permission is forthcoming. The request involves several legal questions and there is considerable doubt that Theriot will be able to secure the necessary authorization. Permission of the property owners must also be secured as well as favorable action by the city of Huntington Beach. The property under question might warrant development if the necessary permission could be secured as all are favorable. One can stand on the Huntington Beach pier, which extends several hundred feet out into the ocean, and watch the bubbles of gas rising to the surface of the water. This emission of gas has been going on for a number of years, in fact long before the Huntington Beach Field was opened up. These gas bubbles, together with oil seepage beyond the water's edge, have been of common knowledge for years.

The two projected deep tests in the Rideout Heights Field, No. 1 Broderick of the Pan American and No. 1 Heights of the Petroleum Securities, are both standing cemented at 700 feet but will probably get under way again within the next few days. The California Petroleum finished cleaning out its No. 2 Mutual at Santa Fe Springs and the well has just been returned to production pumping 110 bbls. of 34.9 gravity oil daily. The Marland is still working diligently with its No. 1 Bixby at Seal Beach but has not yet been able to return it to production making clean pipe line oil. No. 4 Bryant of the Shell, midway between No. 2 Bryant and No. 1 Bixby of the Marland, is stepping right along and has just passed the 3,950-foot level. This well is without doubt the most important test in the area since the original discovery, inasmuch as it should throw considerable light on the future possibilities of this field.

Fullerton

The Birch Oil Co. is preparing to swab No. 2-A at Fullerton and if the production is there this 5,060-foot hole will be tanking oil within a short time. The outlook is rather unfavorable, however, but it may prove a surprise when given a thorough test. No. 1-A is standing rigged up and will be spudded in immediately upon the completion or suspension of No. 2-A. The Brea Canyon Oil Co's. No. 38 is drilling ahead in a hard sand at 3,280. The Union Oil Co. in addition to working on two wildcats on its Olinda property, is drilling ahead in No. 66 Stearns at 3,150 feet and No. 67 Stearns at 2,540 feet. The Fullerton Oil Co's. No. 19-A is in the oil sand at 5,355 feet and looks exceptionally promising for good production.

Drilling work in the Montebello Field was further increased this week by the spudding in of No. 5 P. & B. by the St. Helens Petroleum and No. 17 Temple of the Standard. The latter company has two drillers on its Temple lease and is working with four holes on the Baldwin property. The St. Helens has just about finished rigging up rotary equipment in No. 12 Monterey and actual spud should be made within a short time. The McGinley Oil Co. is drilling ahead in No. 3-A at 2,100 feet and is putting the finishing touches on the rig for a new well, No. 22. H. L. Whiston is moving in rig material for another test on the Bicknell property and he will probably start rig construction some time during the next two or three weeks.

There was very little change in the amount of work being done at Richfield, although of course the various drilling projects in this district made additional hole. On Kraemer lease No. 2, the Standard made satisfactory progress in both Nos. 20 and 21. The California Petroleum Co. is working on two holes in this area, No. 11 Consolidated at 2,725 feet and No. 18 Yarnell, which has just secured a water shut off at 4,096 feet. The Union Oil Co. picked up the pay in No. 9 Yorba Linda Group at 4,404 feet and is being prepared for production. The Standard has just secured a lease on the Anaheim Union Water Co's. reservoir property and will start work on the rig for its first test in the western part of this 141-acre tract.

Midway-Sunset

Drilling operations in the Maricopa Flat sections of the Midwest-Sunset Field are slowing up somewhat, due possibly to the rather unfavorable results of attempts made to pick up the Obispo sand. The Eldora, Pacific and Trojan Oil Cos. have failed to find any productive sand, although all three have drilled wells over 1,000 feet into the brown shale. It begins to look as though the Obispo's No. 6 is producing from a small lenz and it will be quite interesting to watch the result of the new well which this company is starting a short distance away from the discovery well. The California Petroleum Co. has two drillers standing cemented just below the 4,000-foot level, but apparently the company has adopted a policy of watchful waiting and is simply marking time. This is much more desirable than bringing them in at present even if it is possible to do so.

The Associated Oil Co. finished its No. 3 in section 20-31-23, in the Midway section of the Midway-Sunset Field, and brought in a 300-bbl. well from 2,905 feet. About 1,000,000 feet of wet gas is being produced in addition to the oil. The General Petroleum Co. has started redrilling and deepening its No. 1 Emme, which resulted in a small production several weeks ago at 2,445 feet and will carry it down another 25 feet. The Pan American Co. has just spudded in its No. 4 in Section 19-31-23, and is putting up rigs for Nos. 5 and 6.

Ventura

The Associated Oil Co. was not successful in finishing its No. 20 Lloyd in the Ventura Avenue Field due to the fact that the 6¼-inch oil string froze about 700 feet off bottom. The well did, however, come in barefooted doing 1,530 bbls. of exceptionally clean 30.4 gravity oil daily. It is flowing through a 1-inch bean under a pressure of 600 pounds and it is considered quite remarkable that the oil is only cutting 2 per cent in view of the open hole. The Associated Oil Co.'s next completion in this area will probably be No. 26 Lloyd, although this well may be preceded by No. 18 Gosnell of the Shell. These two companies are each running eight strings of tools but it is quite possible that the amount of work will be increased later inasmuch as several new rigs are just going up. The General Petroleum Co. has only one driller on the Barnard and another on the Notten lease but, since the company is not pressed for crude, drilling will go ahead slowly.

The Bolsa Chica Co. has just cemented its No. 1 Hartman, a north line well, at 3,600 feet and it is believed that the Petroleum Securities Co. will follow a similar procedure in No. 1 Willett, a south line well, at about the same depth. The Associated Oil Co's No. 101 Lloyd in the eastern part of the field is not yet ready for a production test but, inasmuch as there is no hurry, the company is going ahead cautiously. The Milham Exploration Co.'s well still farther out is drilling ahead in a hard sand at 3,500 feet. The Chanslor-Canfield Midway Oil Co. is making preparations to land a string of 11-inch in No. 1 Hobson west of the Ventura Avenue Field but this casing, which will be landed at 3,825 feet, is for protective purposes only. Hoyt S. Gale's second test in the Camarillo section is rotating ahead in a hard sand at 1,100 feet. The Shell's No. 1 Berlywood was reported early this week in a hard blue shale at 2,050 feet.

Southern California Wildcats

The Russell Petroleum Co's. No. 1 Joughin, a rather promising looking wildcat located in the Chatsworth sector, is still standing cemented but will probably be drilled out some time within the next week or ten days. No. 1 Wickham of the Marland in the Santa Susana area in section 32-5-17 was drilled out early this week and, while it showed a favorable gas production, there was no oil present due, possibly, to the fact that a satisfactory water shut off had not been secured. It is unknown just what the next move of the Marland will be but it is quite possible that another hole will be drilled in the near future.

The Union's No. 1 McNally at La Mirada has just passed the 4,040-foot level and, since there have been no showings of any kind to date, the prospect of securing commercial production is not any too favorable. H. A. Bardeen, who recently took over the old abandoned hole of the Manhattan-Pacific Oil Co. at Hermosa Beach, has organized the Manhattan Trust Co., under which name he will conduct his operations in that area in the future. Bardeen has finished building the derrick over this abandoned wildcat, which has been showing some oil of late, and is rigging up cable tools for early work. The Milham Exploration Co. is drilling ahead in its No. 2 Conroy in the Newhall-Saugus area at 3,688 feet, while the company's Playa del Rey wildcat is making fairly good footage, the hole being logged early this week at 3,528 feet.

Northern California Wildcats

The Union's No. 1 Miller & Lux in Section 16-28-20, northwest of the old Belridge Field, has just passed the 1,300-foot level and, since this is to be only a survey hole, the necessary markers should be picked up very shortly. Neither the Chanslor-Canfield Midway Oil Co's. wildcat at Delano nor the Main Oil Co's. second test at Wasco showed any improvement during the week. The Milham Exploration Co. reports a depth of 1,470 feet at Buttonwillow, the present formation being a hard sandy shale. The Associated Oil Co. is making rather slow progress at Huron, the company's wildcat in this vicinity being down only 730 feet. The Bolsa Chica Oil Co. is preparing to test out its wildcat in the Kettleman Hills area and, while this hole is credited with approximately 20 feet of oil sand, it is unknown whether it will be commercially productive. The Channel Oil & Development Co. has temporarily suspended work at 4,820 feet on its wildcat in Santa Barbara County but George F. Becker is still going ahead, although this hole is only down 1,800 feet. No. 1 Potter of the General Petroleum Co., a wildcat in San Luis Obispo County, has just passed the 1,000-foot level. The Pyramid Oil Co. is drilling the cement out of its Monterey County test and will probably resume drilling within the next few days. This well will bear watching for the next few hundred feet of hole.

SAN JUAN PIPE LINE BY JULY 1; CONGRESS BUSY ON NAVAJO LEASES

By Anthony McCauley

FARMINGTON, N. Mex., Mar. 22.—Today marked the first step to connect the San Juan Basin oil fields with outside markets when laying of pipe started on the Continental line from Gallup to the Basin. Under the supervision of Thomas Kenney, general manager of the pipe line department of the Continental Oil Co., teams and men were put at work and when the line is under full swing at least 200 men and 100 teams will be employed.

Present plans call for the completion of the line and running of oil by July 1. Some delay may be caused by installation of pumping machinery but the line will be completed by that date and some oil will be running through to the Santa Fe Road at Gallup. It is quite probable that the 4-inch line will be able to take care of 10,000 bbls. daily as the high gravity of the Rattlesnake and Hogback oil is equivalent to almost pure gasoline.

The Continental Co. received 41 cars of line pipe at Gallup Friday which is now being unloaded and is part of a consignment of 175 cars from Youngstown, Ohio. It is understood that 50 more cars are now en route.

The Continental Co. reports the only producer of the week is its No. 15 Rattlesnake which is doing 25 bbls. at 815 feet. The well is shut down for orders and may be drilled deeper. No. 6 Table Mesa of the same company is cementing 5 3/16-inch casing at 1,300 feet.

No. 17 Rattlesnake of the Continental Co., which was a 3,500-bbl. well and which under agreement with the Government would be a test of the Pennsylvania sand, is now drilling at 1,450 feet. The 12½-inch casing was set at 1,340 feet.

Temporarily switching their attention from the Blanco district oil men are now watching the two tests on Red Mesa which are getting deep enough to prove up something in the Dakotas. The Hall well, Section 13-33-12, is down 3,180 feet, where 6⅝-inch is set. In the Erdman test drilling was resumed late last week at 2,670 feet. Both holes bailed considerable green oil which comes from the shale above. The gravity of the oil is 42 degrees and comparable to the high grade of the Mid-Continent Fields.

E. J. Miley has also decided to enter the Red Mesa district and has moved one of his rigs from the Bloomfield district to the latter structure where a location has been made and the rig up.

The Congress Oil Co. lost its tools Saturday and is now fishing at 910 feet.

Representatives of the United Carbon Black Co. of Monroe, La., are again in the field checking up first reports on the Ute Pasture gas fields owned by the Producers & Refiners and Midwest companies. It is reported here that some definite move will be announced in the next ten days.

Durango, Colo., citizens have formed the Durango Oil & Gas Corp. and will drill a structure of 5,000 acres north of that city. S. F. Sproul, of El Dorado, Ark., is president of the company, the land lying in Townships 35 and 36, Ranges 9 and 10.

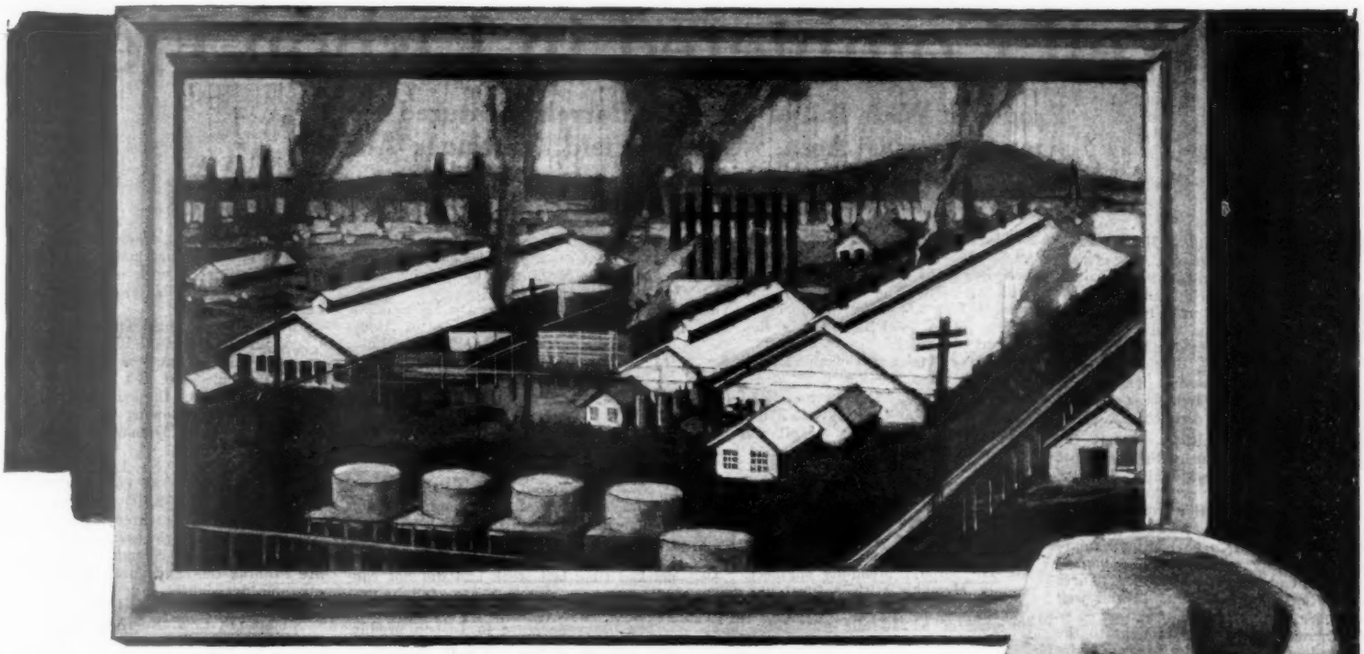
CONGRESSIONAL HEARINGS

By Charles E. Kern

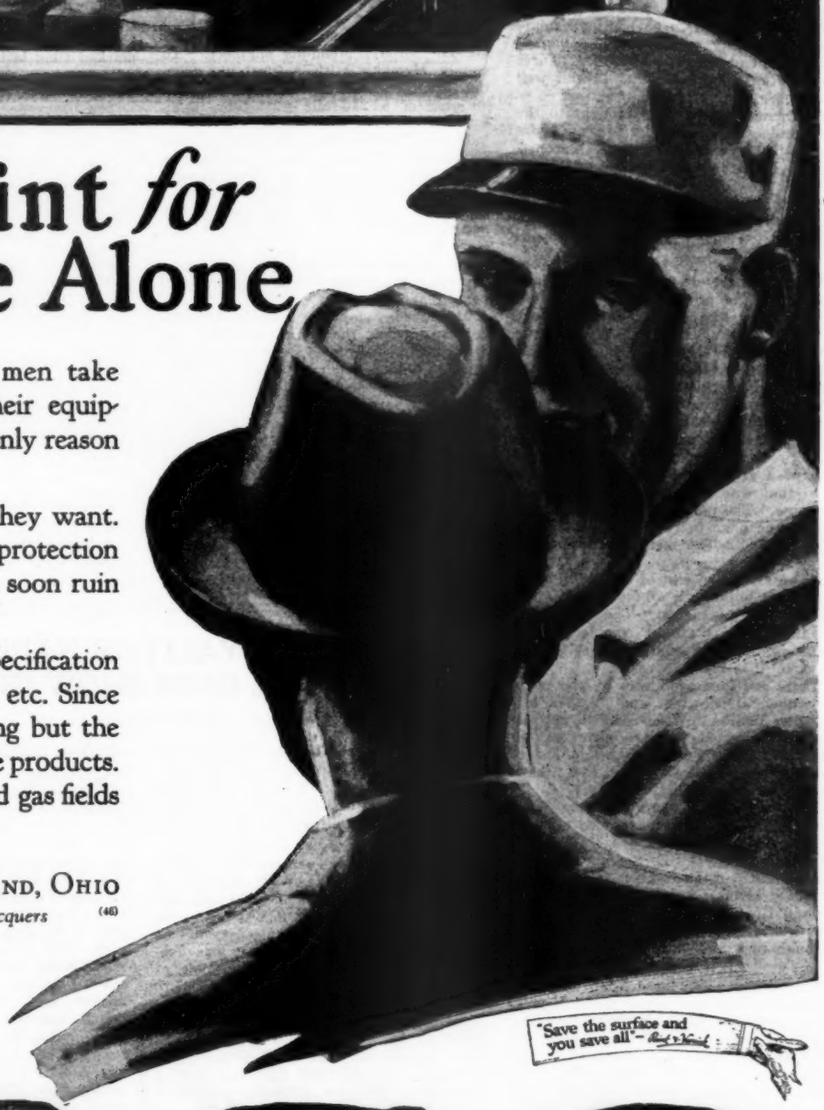
Washington Bureau
The Oil and Gas Journal

WASHINGTON, D. C., Mar. 22.—Initial steps have been taken here looking toward the building of a pipe line from the oil structure in Navajo treaty lands to Gallup on the Santa Fe Railroad. This enterprise contemplates 100 miles of pipe line, with a diameter of six inches. To carry out this purpose the Continental Oil Co. and the Santa Fe Co. are acting

(Continued on Page 116)



You Don't Paint *for* Appearance Alone



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PAINTS VARNISHES ENAMELS LACQUERS

Big Well Completed in Lisbon Field

Producer With Initial of 1,500 Barrels Featured Louisiana-Arkansas Area. Urania Field Continues Active

By James H. Dameron

SHREVEPORT, La., Mar. 22.—Urania, in La Salle Parish, the Trinity sand test in the Caddo district, and the Lisbon area in Arkansas each vied with the other during the past week to claim the attention of operators in the Louisiana - Arkansas district.

Lisbon came to the front with the most sensational development during the past week. Wingfield and associates' No. 1 Slaughter, SE NE half NW SE, Section 9-17-16, came in and was estimated to be making around 1,500 bbls. daily and by far the biggest well yet to be brought in in Lisbon. Three hours after it was brought in the well caught fire.

Emergency crews were brought to the lease and extinguished the fire six hours later with steam and water. A roustabout was burned slightly in fighting the fire. The well flows by heads and is reported to be making a head about every 10 minutes. It is estimated the well will be completed for a 1,000-bbl. producer.

Sign Painter's Prophesy

Veteran operators in the El Dorado area recall the prophecy of an itinerant sign painter who predicted a "gusher" for the "West Field", which operators have named the Lisbon Pool. The prediction was made two years before a driller's bit tapped the sand in Lisbon.

The sign painter was painting a sign for an El Dorado newspaper. His sign was a facsimile of that paper's front page proclaiming to the world the details of a gruesome murder. It was decided that was not the best form of advertising. The painter changed the headline of the page to read "Big Gusher in West Field." The sign is standing today.

At an estimated cost of $12,000, Simms Oil Co. is building a 20-foot band wheel power plant in Lisbon. The foundation for the plant is almost complete. The plant is being erected on the Simms' lease in 9-17-16.

There are four producers on the property now, all flowing, and another test is being drilled. When drilled up, the lease is expected to have eight or ten wells and the power is being installed to pump the producers after they have ceased flowing.

The hopes of operators that the Urania Field would be extended about a mile west by the Standard Co's No. 1 Albritton, SE NE SE, Section 27-10-1e, were blighted when the test failed to find anything in the regular producing horizon around 1,550 feet. The last report from the test read that the bit was boring through rock and shale at 1,603 feet.

Town Lot Drilling

The Tullos town lot drilling continues to be congested and many more derricks being built for "back yard tests."

Urania wound up the week's activities with 18 new wells with a combined production of 1,095 bbls. Ten of the new wells are flowing, seven are being produced with pumps and only two failures were reported in that area.

Nine wells are waiting for standard rigs and 38 are boring away to the sand Twenty derricks are standing, 13 tests have been rigged up and 6 locations have been made.

The past week witnessed the entrance of several new operators in the Urania Field and the activity there shoved Louisiana in the lead over Arkansas in active field operations.

The Gulf Co's No. 1 Lane, Section 13-21-15, the next deep test in the Caddo area due to be drilled in is being watched with interest. The 4½-inch casing was cemented at 3,588 feet at the test. The cement is to be drilled out in the next day or two.

The peculiar antics of the Dixie's No. B-2 Noel, same section, holds the attention of oil men. It was completed last week and when pinched in the well makes around 125 bbls. of oil and 800 bbls. of salt water. When turned loose it makes salt water and gas.

Memphis Studying Monroe

A study of the potential capacity of the vast Monroe gas field with the view of its supplying Memphis, Tenn., with natural gas, was started last week by W. H. Corday, Memphis engineer. To supply Memphis with natural gas from the Monroe Field would require the building of a 216-mile pipe line at an estimated cost of over $6,000,000.

Mayor Rowlett Paine of Memphis and several city officials visited the field last week and were guests of Sam Hunter, president of the Natural Gas Co. of Monroe. Mr. Hunter has been conducting negotiations with the Memphis city officials for some time.

Gas is being supplied Memphis by a private corporation at the rate of $1.20 per 1,000 feet.

Mr. Corday is also investigating the cost of laying the long pipe line and other details in connection with the project. Finishing his investigation in Monroe he will return to Memphis to conclude the survey. He expects to make his report to the city officials within the next six weeks.

Mayor Paine refused to state whether the city planned to pipe the natural gas as a municipal proposition or make any definite statement until the engineer's report revealed whether the Monroe gas could be pipe to Memphis at a saving which would offset the initial cost.

The announcement of Memphis' interest in the Monroe gas field came on the heels of an announcement that New Orleans was forming plans to bring Monroe gas into that city.

The Southern Carbon Co., accepted a franchise granted by the Board of Aldermen of Pineville to William Polk, trustee, for the installation of natural gas mains in Pineville. The Southern Carbon Co., will finance the project and supply the gas. Work will be started in the next two weeks and an effort will be made to complete the project in three months.

Production Up a Little

The gains recorded in the production of four fields in Louisiana failed to keep the state's production slumping slightly as four other fields fell off. Homer Field marked time last week and did not contribute to the state's rise or fall in production.

The heavy increase in Lisbon production and the small boost in Smackover light output gave Arkansas a gain of 875 bbls. over last week's average and gave the combined production of the states an increase. Lisbon increased 960 bbls. during the past week.

North Louisiana

Bellevue	2,485
Caddo light	9,275
Caddo heavy	2,180
Cotton Valley	8,270
De Soto and Red River	3,805
Elm Grove	670
Haynesville	10,410
Homer	5,875
Urania	5,685
Total	48,655

Arkansas

Smackover heavy	133,190
Smackover light	18,505
El Dorado	7,545
Lisbon	2,280
Nevada	2,015
Stephens	1,530
Total	165,065
Total both fields	213,720
Increase	860

Arkansas Operations, Union County

Due to the activity in the Lisbon area Union County easily leads in field operations in Arkansas. There were 31 completions in the county last week of which 18 were oil wells with a combined production of 1,443 bbls., two gas wells and only one failure.

In Lisbon, Rovenger Oil Corp's. No. 2 Goodwin, Section 16-17-16, is flowing 136 bbls. daily from sand at 2,084 to 2,104 feet. Rovenger No. B-1 Goodwin, same section, penetrated the sand at 2,074 feet, 30 feet, and is flowing 20 bbls. daily. Rovenger's No. 3 Dumas, Section 9-17-16, is a derrick.

Olvey and Jones' No. 1 Slaughter, Section 9-17-16, came in flowing 200 bbls. from sand at 2,085-2,105 feet. Same operators are drilling three other tests in Section 9. Six-inch casing was set at 2,063 feet at No. 2 Slaughter and drillers are running the sand pump to 2,100 feet. six and five-eighths-inch casing is being cemented at 2,055 feet at No 4.

Simms Oil Co's. No. A-2 Dumas, Section 9-17-16, is 23 feet in the sand topped at 2,071 feet and is flowing 60 bbls. daily. Casing was cemented at 2,065 feet at Simms' No. A-3, same section and the 10-inch casing is being set at 160 feet at No. A-4 Dumas.

Atlantic Oil Producing Co.'s No. 2 Andress, Section 16-17-16, is drilling at 1,400 feet. Atlantic has a rig up for No. 3 Andress, in the SW cor. SW NE, Section 16-17-16. Coats & Sowell's No. 1 Dumas, Section 10-17-16, has been drilled to 2,081 feet and the 6⅝ is being cemented at 2,075 feet. A derrick is up for No. 2 Dumas in the NW cor. of the east 30 acres of the NW SW, Section 10-17-16.

Foster and associates have a derrick up for No. 1 Dumas, Section 9-17-16. Keiser and associates have a derrick up for No. 1 Harrell, Section 15-17-16. A derrick is being built for J. P. Kelly's No. 1 Mitchell, in the NE cor. of the SW, Section 20-17-16. Lion Oil and Refining Co's. No. 1 Goodwin, Section 16-17-16, is drilling at 800 feet. No. 2 Goodwin is drilling at 1,400 feet. Magnolia has a rig up for No. 1 Dumas in the SW cor. SE NE, Section 9-17-16, and a rig up for No. 1 Slaughter in the same section.

Ouachita County

Ouachita County finished the week without a single completion, however, six are waiting on standard rigs.

Calcord and associates are setting the 5-inch casing at 2,601 feet at No. 5 Laney, Section 31-15-15. Gilliland Oil Co.'s No. 8 Kyle, Section 29-15-16, is shut down at 2,300 feet waiting for cable tools. H. M. Harrel's No. 1 Miline, Section 32-11-17, is shut down at 40 feet because of high water. Humble Oil Co's No. B-11 Arnold, Section 26-15-16, is being cored at 2,290 feet. Its No. 3 Laney, Section 31-15-15, penetrated the sand at 2,400 feet, two feet, and has 1,600 feet of oil in the hole and is waiting for a standard rig.

Magnolia Oil Co's. No. 12 Goodwin, Section 5-16-15, is drilling at 1,350 feet. It's No. 3 Sherry fee, Section 30-15-16, is shut down waiting for cement to set a 2,244 feet. Marine Oil Co's. No. 10 Umsted, Section 5-16-15, is drilling at 2,150 feet. A. Meeks' No. 3 LaGrone, Section 36-15-17, is drilling at 600 feet. Ohio Oil Co's. No. 7 Goodwin, Section 29-15-15 is drilling at 2,209 feet.

The 4½-inch casing stuck 19 feet off bottom at the Pure Oil Co's No. 3 Brister, Section 28-15-15. The total depth of the hole is 2,443 feet and the 3-inch is being run. J. D. Reynold's No. 1 Smith, Section 13-15-17, is being swabbed to test at 2,255 feet. Roxana Petroleum Corp's. No. A-4 Bennett, Section 32-15-15, had to be recemented at

OFFSET TO ROYALITE'S NAPHTHA WELL GETS SHOW OF LIGHT OIL

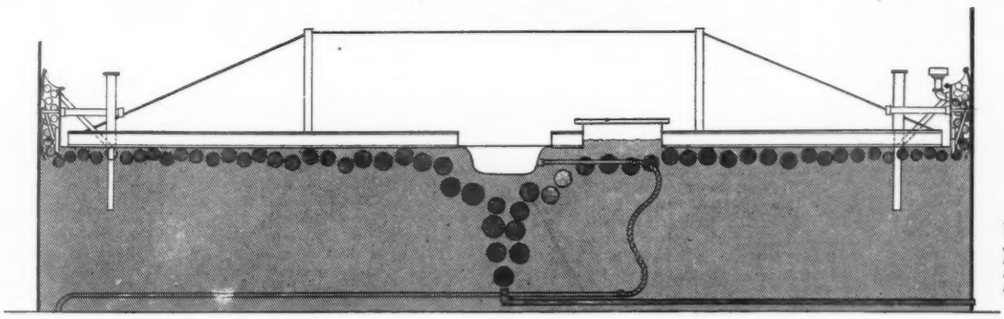
By Victor Lauriston

CHATHAM, Ont., Mar. 20.—In the Turner Valley Field, southwest of Calgary, Vulcan Oils, Ltd.'s, No. 1, offsetting the Royalite Oil Co.'s No. 4 gusher, encountered another show of light oil around 4,000 feet. The test has since been carried deeper, and at last reports was fishing for a lost bit at 4,100 feet. The drilling has not yet reached the productive horizon in the Madison limestone encountered in Royalite's No. 4 at 3,740 feet. The Vulcan test has carried the 8-inch casing to below 4,050 feet and with a good-sized hole no difficulty is anticipated in recovering the tools.

McLeod Oil Co.'s No. 2, Section 1-20-3w5, in the same field, is reported making 1,500,000 feet a day of wet gas with some oil in the hole. The hole has been cleaned out and the gas is being shut off preparatory to deeper drilling. No. 3 has been spotted on Section 1-20-3w5, about 600 feet west of No. 1, and is rigging up. Drilling will start as soon as No. 2 is finished.

Dalhousie Oil Co., subsidiary of Imperial Oils, Ltd., in which shareholders of the Southern Alberta Oils, Ltd., retain an interest, has formally taken over the Southern Alberta Oils, Ltd.'s properties in the Turner River Field. Imperial Oil, Ltd., holds 51 per cent of the stock in the new organization. Southern Alberta Oils, Ltd., was a consolidation of various companies originally organized at the time of the Calgary boom by William Livingston, J. D. Pugh and associates of Calgary. The companies included the Southern Alberta Oil Co., the Alberta Southern Oil Co. and the Southern Alberta Refineries, Ltd. The consolidation was effected about 1921, when considerable Chicago capital was put into the enterprise. The properties include the Southern Alberta's No. 1, Section 18-20-2w5, at one time rated good for 50 bbls. a day from a producing horizon at 3,485 feet; Southern Alberta's No. 2, Section 18-20-2w5, unfinished but with a show of light oil around 3,700 feet; Alberta Southern's No. 1, Section 18-20-3w5, with a reputed production of 10 bbls. a day or less at 3,080 feet, and topping plant of the Southern Alberta Refineries, Ltd. The new owners are deepening Alberta Southern's No. 1, which will be known as Dalhousie's No. 3. This is resuming drill-

(Continued on Page 120)

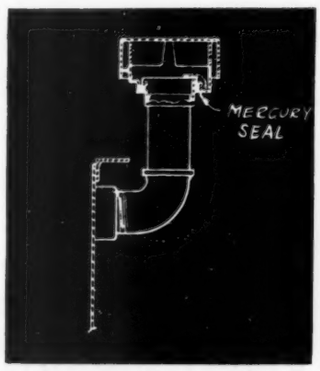


A cross section of the Wiggins Roof. Oil in air bubbles and vapors is collected under and retained by the flexible gas-tight seal.

A seal that separates oil and air

THE Wiggins Roof is the only roof that completely seals the tank and recovers oil entrained in air and gas.

Bubbles of gas and air escaping along the rim of a pan set on the oil accelerate evaporation and cause losses through splash-over. The only way entrained liquid can be separated from the escaping air is by putting a seal which will perform this separation between the pan and tank shell. The Wiggins Seal is the only one designed to eliminate these losses.



The mercury-sealed vent which allows air to pass out of the seal. When the pressure in the gas-tight seal reaches ¼ ounce.

Large air and gas bubbles entering the tank through the filling line, rise to the under side of the Wiggins Roof, break into small bubbles and move toward the edge of the pan.

The roof shoe traps them into the flexible gas-tight seal. They travel circumferentially to a vent, losing entrained liquid all the time. By the time the vent is reached all the oil has been lost and the air alone passes through the vent, which opens at one-quarter of an ounce pressure. Oil vapor under the gas-tight seal condenses and returns to the tank.

Write for literature that describes Wiggins Roofs and tells how to reduce evaporation losses to a minimum.

CHICAGO BRIDGE & IRON WORKS

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New York, 3147 Hudson Terminal Bldg.
Cleveland, 2204 Union Trust Bldg.
Dallas, 1641 Praetorian Bldg.
Atlanta, 1054 Healey Bldg.
San Francisco, 1054 Rialto Bldg.

The WIGGINS ROOF

OGJ 3-25 Gray

KEEPS OIL IN - - - KEEPS FIRE OUT

2,409 feet. Its No. 5 Snyder, Section 34-15-15, is drilling at 2,236 feet.

Simms Co's. No. 5 Murphy, Section 28-15-15, is shut down at 2,624 feet waiting on a standard rig. Its No. 5 Murphy, Section 29-15-15 is drilling at 114 feet. Its No. 9 Reynolds, Section 32-15-15, is being cored at 2,568 feet. Southern C. O. P. Co's. No. 6 Joyce, Section 34-15-15, found a good show of oil and gas at 2,571 feet and is coring at 2,580 feet. Six-inch casing was cemented at 2,352 feet at the Southern Co's No. 4 Murphy, Section 4-16-15. Its. No. A-4 Umsted, Section 36-15-16, is drilling at 1,650 feet. Sunny Jim Oil Co's. No. 3 Laney, Section 36-15-16, is a rig. The Texas Co. cemented 6-inch at 2,545 feet at No. 11 Johnson, Section 3-16-15. The 8¼-inch casing was cemented at 2,393 feet at Unity's No. 9 Umsted, Section 33-15-15. Woodley Petroleum Co's. No. A-4 Umsted, Section 4-16-15, is drilling at 50 feet.

In the Stephens district Buffalo Oil Co's. No. 2 Davis, Section 22-15-19, is drilling at 1,500 feet. Louisiana Oil Refining Corp's. No. 1 Green, Section 22-15-19, is three feet in sand topped at 1,552 feet and has 1,300 feet of oil in the hole. The well is shut down waiting for a standard rig. The 6⅝-inch casing was set at 1,412 feet at J. D. Reynold's No. 1 Thompson, Section 22-15-19.

Urania Field

Adding more than 1,000 bbls. to the state's production with 18 new wells, Urania staged a comeback during the past week and raised the hopes of operators that the field would be developed into a 10,000-bbl. field.

Louisiana Oil & Refining Co., the most active in the field at present, completed one of the best wells to be drilled. Its No. B-28, Section 25-10-1e, is flowing 200 bbls. daily from sand at 1,510-14 feet. Its No. B-27, same section, was completed in sand at 1,541-44 feet and is flowing 100 bbls. daily. No. B-11 was completed and is estimated to be worth 30 bbls., 14 per cent water and 2 per cent b.s., at 1,563 feet. No. B-7 Tremont, Section 25-10-1e, is making 50 bbls. on the pump at 1,573 feet.

Louisiana Co.'s No. 2 Bass, Section 24-10-1e, is 2 feet in sand topped at 1,556 feet and waiting for standard rig. A rig is up for No. A-4 Tremont in the SW cor. NE NE, Section 28-10-2e. No. B-1 Tremont, Section 30-10-2e, is a location. No. B-9 Tremont, Section 25-10-1e, is shut down at 1,567 feet with a hole full of oil wating on a standard rig. Cement at 1,500 feet is being drilled out at No. B-15 Tremont, Section 25-10-1e. No. B-29, same section, is drilling at 1,522 feet and the 6-inch was cemented at 1,512 feet at No. B-30.

Tullos Oil Co.'s No. 2 Miles, Section 25-10-1e, shared honors last week with the Louisiana Co.'s well. No. 2 came in flowing 200 bbls. from sand at 1,530-34 feet.

J. S. Abercrombie & Co.'s No. 1 M. M. King, NW cor. SE SW, Section 25-10-1e, is a rig. No. 2 King, SW cor. SE SW, is a derrick pattern. Arizola Petroleum Co.'s No. 1 Tannehill, NE cor. W half NW, Section 36-10-1e, is a rig as is No. 2 Tannehill, NE cor. W half NW, Section 36-10-1e. No. 3 Tannehill, NW cor. W half NW, Section 36-10-1e, is a derrick.

Atlantic Oil Producing Co. abandoned the location at No. 3 Tullos, Section 26-10-1e, and moved the derrick to the new location for No. 3 in the SE cor. NE NW. Atlantic Co.'s No. 4 Tullos, Section 26-10-1e, was completed in 6 feet of broken sand, topped at 1,507 feet and is pumping 50 bbls. of fluid, 80 per cent salt water. Atlantic Co.'s No. 5 Tullos, Section 23-10-1e, tested salt water at 1,523 feet and will be abandoned.

Ayers and associates' No. 3 Urania, Section 13-10-1e, is being rigged up. Bailey and associates' No. 1 Renfroe, Section 26-10-1e, is cementing 6-inch at 1,507 feet. Beckman and associates' No. 5 Urania, Sect on 25-10-1e, was completed for a 50-bbl. pumper at 1,550 feet. Their No. 7 Urania, same section, is 6 feet in sand, topped at 1,552 feet, and has 600 feet of oil in the hole. A standard rig is being moved in. The 6-inch plug is being drilled out at O. W. Clark's No. 1 Bass, Section 25-10-1e, at 1,535 feet. Clark's No. 1 J. D. Russell, Section 26-10-1e, was completed in sand at 1,556-61 feet and is estimated to be worth 25 bbls. A rig is up for No. 2 Russell in the center east end of Lot 1, Block 3, Section 26-10-1e, and the 6-inch was cemented at 1,535 feet at No. A-2. Clark's No. 1 Smith, Section 26-10-1e, was completed for a 10-bbl. pumper at 1,572 feet, and his No. 3 Tullos, in the NW cor. SW SE, Section 23-10-1e, is a derrick pattern.

Waiting on Rig

Cook Drilling Co.'s No. 1 K. S. Russell, Section 25-10-1e, is waiting on a standard rig at 1,538 feet and the 6-inch was cemented at 1,492 feet at No. 2 Russell, same section. Cox and associates's No. 1 Herbert, Section 26-10-1e, is in sand at 1,505-11 feet with a hole full of oil waiting for a standard rig and a rig is up for No. 2 Herbert.

Dixie Co.'s No. 2 Urania, Section 24-10-1e, is drilling at 1,350 feet. Explorers Oil Corp.'s No. 1 Keith, SW cor. N half NE NW, Section 36-10-1e, is a rig; No. 2 Keith, NW cor. N half NE NW, is a derrick; No. 3 Keith, NE cor. N half NE NW, and No. 4 Keith, SE cor. N half NE NW, are locations. Explorers' No. 1 L. Tullos, Section 23-10-1e, was completed flowing 10 bbls. from sand at 1,498-1,502 feet.

Ferguson and associates completed No. 1 Jerrell, Section 26-10-1e, for a 40-bbl. pumper in sand at 1,540-48 feet. A rig is up for their No. 1 Kyle & Davis, NW cor. SW NW, Lot 8, Block 1, Holmes addition, Section 25-10-1e. Galloway and associates' No. 2 Pendarvis, Section 23-10-1e, is flowing 10 bbls. daily from sand at 1,526-30 feet. No. 3 Pendarvis, same section, is a derrick pattern. A rig is up for J. Q. Graves' No. 1 King, SE cor. SE SW, Section 25-10-1e. Greenwall and associates' No. 1 Sayers, Section 26-10-1e, was completed for a 30-bbl. pumper in sand at 1,552 feet.

Hamilton and associates cemented the 6-inch at 1,506 feet at No. 3 Bennett, Section 25-10-1e. The cement is being drilled out at Hamilton & Musick's No. 1 Volk, Section 26-10-1e, at 1,498 feet. The hole was abandoned at 1,572 feet and the rig moved from Hudson's No. 1 Urania, Section 12-10-1e. Hunt and associates' No. 1 State, Section 26-10-1e, tested salt water at 1,502 feet and then plugged back 2 feet and is shut down waiting for orders.

Hunt and associates' No. 2 Tullos heirs, Section 26-10-1e, is flowing 50 bbls. daily from 1,511-19 feet. Six-inch was cemented at 1,483 feet at No. 3. No. 4 is shut down at 1,470 feet because of high water and No. 5 is drilling at 75 feet. Hunt, McCurry & Zoder's No. 1 Winberry, Section 18-10-2e, is drilling at 1,300 feet. Six-inch casing was cemented at 1,534 feet at H. M. Jones' No. 4 Russell, Section 25-10-1e. Jones & Womack's No. 1 Perrin, Section 26-10-1e, formerly reported as W. W. Hawkins, trustee's, No. 1 Tullos, is drilling at 1,250 feet. Four feet of sand, topped at 1,538 feet, is being bailed for a test at Keisker's No. 1 Russell, Section 25-10-1e. Six-inch casing was cemented at 1,527 feet at Kimbrough & Willis' No. 1 fee, Section 26-10-1e.

Testing Sand

Long and associates' No. 1 Bass, Section 25-10-1e, is testing 4 feet of sand at 1,543-47 feet. McWilliams & Foster's No. 2 J. D. Russell, Section 25-10-1e, formerly Cook Drilling Co.'s No. 2 Russell, is being rigged up. Minnesota Oil Corp.'s No. 1 J. M. Cotton, Section 25-9-2e, is a derrick. Mistrot and associates' No. 1 Russell, center Lot 10, Block 8, Section 26-10-1e, is drilling at 1,532 feet. Mitchell and associates' No. 1 Herbert, Section 26-10-1e, is drilling at 1,530 feet.

Natural Gas & Fuel Co.'s No. 1 T. Russell, Section 26-10-1e, is being bailed to test sand at 1,542-57 feet. A derrick is up for No. 4 Russell, SE cor. Section 26-10-1e. Same company has made a location for No. 1 Frank Tullos, NE cor. NW SE, Section 26. No. 1 H. Tullos was cleaned out and the hole is full of oil from sand at 1,484-91 feet and is shut down waiting for a standard rig. Six-inch was cemented at 1,478 feet at No. 3 H. Tullos. A derrick is standing for No. 3 Tullos in the NE cor. SW NE, Section 26-10-1e, and No. 4, NE cor. NW SE, is drilling. No. B-1 Urania, formerly reported as No. 3 Urania, Section 18-10-2e, is drilling at 1,046 feet.

Nelson and associates have a derrick up for No. 1 Bryant & Harvey, center Lot 8, Block 9, Section 26-10-1e. Ohio's No. 3 Urania, Section 24-10-1e, is shut down at 1,553 feet waiting for a standard rig. No. 3 tested dry at 1,549 feet and found a show of oil at 1,551 feet. Ohio Co.'s No. 4 Urania, Section 18-10-2e, is drilling at 1,150 feet and a derrick is up for No. 5 Urania, NE cor. NW NE, Section 18-10-2e. Roberts and associates' No. 1 Russell, Section 25-10-1e, is flowing 20 bbls. daily from sand at 1,512-17 feet.

Sherman and associates' No. 1 Russell, Section 25-10-1e, is drilling at 1,400 feet. Six-inch was cemented at 1,534 feet at Standard Drilling Co.'s No. 2 Clinton, Section 26-10-1e. Same company's No. 1 Bass, Section 26-10-1e, was completed and is flowing 20 bbls. daily from sand at 1,530-34 feet. Standard Oil Co. of Louisiana has a rig up for No. 3 Urania, Section 19-10-2e. Its No. 4 Urania, same section, tested 700 feet of salt water and was abandoned at 1,566 feet. It has a rig up for No. 5 Urania, NE cor. NE SE, Section 13-10n-1e.

Trio Oil Co.'s No. 1 Urania, Section 19-10-2e, started drilling and is setting the 10-inch at 103 feet. A location has been made for W. and H. Oil Co.'s No. 1 King, NW cor. NE NE, Section 36-10-1e. Six-inch casing was cemented at 1,517 feet at George W. Wetherbee's No. 1 Norrid, Section 25-10-1e, and casing was cemented at 1,528 feet at O. F. Whittaker's No. 2 King, Section 36-10-1e.

Williams Drilling Co. has four operations in Section 26-10-1e. No. 1 Herbert was completed flowing 50 bbls. in sand at 1,524-29 feet. No. 2 is testing at 1,560 feet after finding only a light show in broken sand at 1,541-47 feet. No. 3 Herbert is a derrick pattern as is No. 4 Youngblood and associates No. 1 Doughty, NW cor. NE SW, Section 36-10-1e. Same operators have made a location for their No. 1 W. O. W., Section 25-10-1e. Youngblood & Ertel's No. 1 Price heirs, Section 25-10-1e, formerly W. W. Hawkins, trustee's, No. 1, is swabbing 125 bbls. daily from sand at 1,537-43 feet. Six-inch casing was cemented at 1,500 feet at Zeigen and associates' No. 3 Urania, Section 18-10-2e.

Marine Co. Operations

Marine Oil Co.'s No. 3 Slaughter, Section 9-17-16, is a derrick. Six-inch casing is being cemented at 2,106 feet at Marine's No. 2 and at 2,070 feet at No. 3 Slaughter. Six-inch casing is being cemented at 2,053 feet and the total depth of the hole is 2,063 feet at Miller and Cottingham's No. 1 Slaughter, Section 9-17-16. Natural Gas and Fuel Co's. No. 1 Andress, Section 16-17-16 is drilling at 1,610 feet. Six-inch casing is being cemented at 2,108 feet at No. 2 and No. 3 and 4 Andress are derricks.

Oil Fields Corp's. No. 1 Dumas, Section 10-17-16, is drilling at 1,900 feet. Owens and associates' No. 1 Porter, Section 4-17-16, is coring at 2,142 feet. Pure Oil Co.'s No. 1 Dumas, Section 9-17-16, cemented 6⅝-inch casing at 2,051 feet. J. D. Reynolds' No. 2 Dumas, Section 15-17-16, is shut down at 2,149 feet waiting for power. Reynolds' No. 3 Dumas is waiting for cement to set at 2,005 feet. His No. 4 Dumas in the SW cor. NW NW, is a derrick pattern. Reynolds and Marr's No. 1 Mooty, Section 15-17-16, is drilling at 1,000 feet. Smith Oil Corp. has a rig up in the SW cor. of the SW NW, Section 10-17-16.

Wingfield and associates have eight operations in Lisbon, all in Section 9-17-16. No. 2 Dumas is drilling at 1,300 feet. The 6-inch was set at 2,053 feet at No. 2 Slaughter. No. 3 Slaughter is a derrick and Nos. 4 and 5 are locations and No. 6 is a derrick. A rig is up for No. A-1 and a derrick is standing for No. A-2. Same operator's No. 1 Cruse, Section 27-17-16, is drilling at 2,150 feet.

Woodley Petroleum Co.'s No. 4 Bilyew, Section 8-16-15, is drilling at 1,600 feet.

(Continued on Page 118)

CHICAGO SYNDICATE PAYS $1,250 PER BARREL FOR ARTESIA CRUDE

By Special Correspondent

ARTESIA, N. Mex., Mar. 19.—A price for production of $1,250 per barrel, in Section 17-18-27, the proven area, was established in the Artesia Field during the current week by the purchase of the 40-acre tract formerly owned by the Hurst Syndicate. This property, which has one producer, was bought by H. H. Sernes of Chicago, representing a group of oil operators in that city. It is their intention to drill four additional wells as soon as possible.

Three more producers were brought in during the week, bringing the total for the Artesia Field to 145 producers, with 14 dry holes. The Maljamar Oil & Gas Corp. has a nice completion in No. 16 in the NW of Section 28-18-28, which was shot from 2,015-40 feet. This well is gauging 200 bbls. flush.

The Dome Oil Co. has a good well on its 40-acre tract in Section 21-18-28, it being No. 4 which, shot from 2,143-69 feet made 140 bbls. the first 12 hours. This 40 is considered one of the best pieces of acreage in the field, the No. 2 on its completion flowing at the rate of 250 bbls. for the first seven days. Settled production of the producers on this lease average 75 bbls. each.

The Ohio Oil Co. has completed No. 1 Marion in the SE of the NE of Section 5-18-28. Drilled to a depth of 2,501 feet, this well will be shot within the next few days. This company is running tubing in No. 1 Toomie Allen in the SE of Section 28-18-28, which was shot several days ago with 140 quarts. On the New States lease, the Ohio Oil Co. is now drilling at 2,360 feet in No. 1, which passed up a sand from 2,231-43 feet. Fourteen hundred feet of fluid is standing in this hole.

The Texas Co. will probably make a light well in No. 4 in Section 5-18-28. Drilled to a depth of 3,500 feet this well was plugged back to the 2,700-foot depth and shot.

A blowout at 500 feet in Wade & Bujac's No. 1 on the Goodale permit, Section 19-18-28, scattered rocks for a distance of a quarter mile.

In Lea County, the Maljamar Co's. No. 1 on the Baish permit is temporarily shut down after having encountered some more sand and additional gas.

Alleging unjust discrimination exists on the part of railroads against the New Mexico refiner, members of the New Mexico Oil Men's Association in session in Albuquerque, March 13, voted unanimously to call upon the State Corporation Commission for relief. This motion was made by M. O. Danciger of Artesia and followed an address by Bruce Sullivan of the Sullivan Refinery at Dayton.

Mr. Sullivan stated that the Gilliland Oil Co. at Albuquerque could ship oil from Kansas to Springer, N. Mex., cheaper than it could ship oil from Albuquerque to Springer. He stated he had taken the matter of rates up with leading officials of the Santa Fe railroad but to date had been unable to obtain any action. Mr. Sullivan stated that while it cost but 22½ cents per cwt. to ship the refined product from the Panhandle to the Gulf, from New Mexico points to the Gulf it costs 47 cents per cwt. Due to these discriminating rates there are not enough refiners in the state to handle the production and a large share of the oil must find a market outside of New Mexico.

Drilling Reports

Colorado Drilling Co's. No. 1 Irvin, SE of the SE of Section 8-16-27, drilling below 1,500 feet; Compton Co's. No.

(Continued on Page 142)

Baldwin Precision Oil Well Chains

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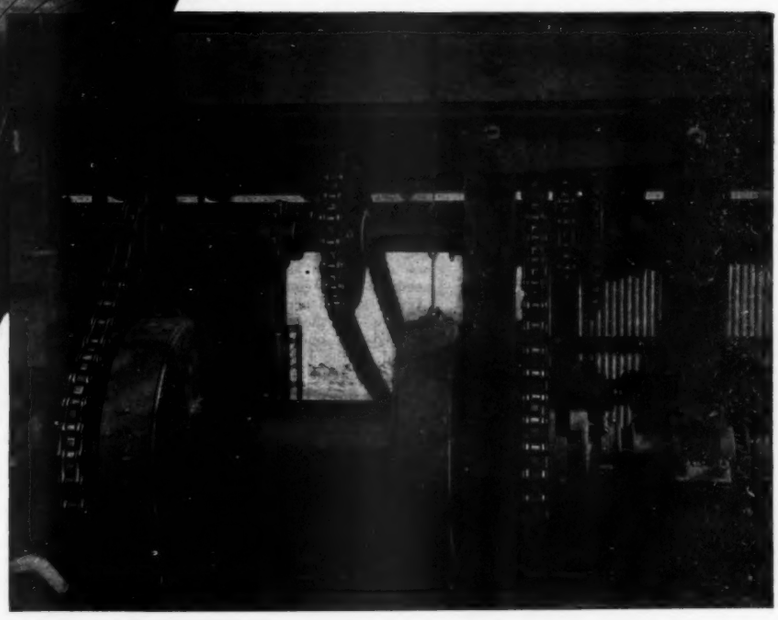

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May Drill Deeper in Old Lima Field

Good Well in One of Its Oldest Divisions. Saginaw, Michigan, Field Now Has Four Producers and Three Wells Drilling.

By Whit

FINDLAY, Ohio., Mar. 22.—Another quiet week prevailed in field work in the section of the Central West Field north of the Ohio River, comprising central and northwestern Ohio, Indiana, Illinois and Michigan. The total completions for the week, including five offside wells, numbered 18, 10 of which were oil producers, with a flush of 321 bbls., 5 were dry holes, 3 gas wells and 4 old wells pulled out and abandoned.

At the start of the week it looked very favorable for some weather that would bring out the operators, but snow appeared again, and, while it was not cold, it made the roads soft off the macadamized highways. Operators are anxious to start work, and when they do it will naturally be in a rush way to make up for lost time.

The only wells in a class by themselves that were reported come from the old Wood County area of the Lima Field and in the Allendale Field of Wabash County, Illinois.

Lima Field

Quite a sensation was created when a century producer was completed in some of the oldest developed part of the Lima Field by the Ohio Oil Co. in its No. 31, located 1,000 feet from the south line and 900 feet from the east line of the M. Auverter farm, in the northwest quarter of Section 11, Henry Township, Wood County, and almost west of Cygnet and north of North Baltimore. This well struck top of the Trenton at 1,151 feet and was drilled 235 feet in to a total depth of 1,386 feet, showing a flush production of 100 bbls. This well shows that there is still a large amount of crude yet to be produced from the Trenton and it is evident drilling deeper into the producing formation will bring it forth. This well is in territory drilled first in the latter 80s, and many of the old wells are still producing a small amount of crude daily.

There is now talk of the forming of a syndicate to do some still deeper drilling in the old Trenton Rock Field, in fact to go at least from 4,000 to 5,000 feet with hopes of encountering a pay sand below the bottom of the Trenton. The supposition has always been that nothing of a crude oil nature would be found below the Trenton on account of the St. Peter sand that lies below, but there is no certainty there is not an oil producing formation below, for only one well known to be drilled in Ohio has ever penetrated the St. Peter formation and that was drilled by Rolla A. Hughes, now deceased, who was a well-known oil operator, merchant and banker at Cygnet for many years. This well was located on the President Rutherford B. Hayes farm in Portage Township, Wood County, which encountered salt water in the top of the St. Peter formation. It must be remembered that it is only a few years back when a well drilled in Bear Creek Township, Jay County, Indiana, passed through both the Trenton and St. Peter formation, encountering three showings of oil, and if this can be found below these formations in Indiana there is no reason that they do not exist in the Lima Field. The idea of forming a company for this purpose is to have the oil operators interested in the development of holdings in the Trenton Rock fields get together enough funds to drill at least two deep tests which will satisfy them whether or not there is anything down there below. It may be that big production might be developed at greater depths, and if such is the case it would mean much for the owners of producing properties at a small cost. This proposition was brought before the writer by an oil operator who visited Toledo for the expressed purpose of figuring out a way to get some deep tests drilled. Tests of this kind would draw attention from operators all over the country.

Charles Geselchen and others have brought in their No. 3 well, 250 feet from the south line and 1,070 feet from the east line of the William Lenney farm, Section 1, Bath Township, Allen County, for a flush of 30 bbls., which is an exceptionally good well for that area. Trenton was topped at 1,311 feet and drilled 55 feet in.

N. E. Masters, a former operator in the Hotmire Pool of Jay County, Indiana, who recently entered the Lima Field, is meeting with success, having drilled in four commercial producing wells out of that number of completions. His latest is No. 3 well, 900 feet from the south line and 800 feet from the east line of the N. Nolan farm, in the southwest quarter of Section 3, Center Township, Mercer County, with a flush of 30 bbls. Top of sand was at 1,146 feet, and total depth of 1,189 feet. This is in an area opened up a year or so ago by Mack P. Colt, the Lima operator.

In Scott Township, Sandusky County, Charles Brown's seventh well, in the southwest corner of the Henry Nye farm, in the northwest quarter of Section 35, pumped 5 bbls., with top of sand at 1,254 feet and 23 feet in the sand.

Along the Portage River, in the Elmore Field of Harris Township, Ottawa County, the River Oil Co's. No. 7 well, 800 feet from the south line and 600 feet from the west line of the Earnest Bussman farm, in the southeast quarter of Section 14, pumped 8 bbls. Sand was found at 1,255 feet and total depth 1,304 feet.

Michigan

Three wells are under way in the Saginaw County Field of Michigan. The Saginaw Prospecting Co., which has four producers doing close to 60 bbls. daily, is now working on No. 5. The Bliss Petroleum Co. is drilling one and the Sun Oil Co. is nearing the sand with its first test. The latter company, with headquarters at Toledo, Ohio, recorded in Saginaw County 14 oil and gas leases, 12 of which are in Kochville Township, 1 in Bridgeport, while the other is in Saginaw Township, Saginaw County.

Advice from Lansing, Mich., is that Mid-Continent operators have requested the State Conservation Commission of Michigan to lease the oil rights in state-owned lands in Presque Isle, Montmorency, Cheboygan, Alpena, Otsego, Antrim and Charlevoix Counties. These parties hold leases on privately owned lands in the counties, and surveys have convinced them that oil deposits will be found. No action was reported taken by the commission.

Central Ohio

Only three completions were reported from the Central Ohio Field during the week, all being gas producers and five new wells brought in on the offside areas of the field. Nine new wells are reported drilling and a couple of new locations staked for wells.

In Hanover Township, Ashland County, the Ohio Fuel Gas Co. drilled a dry hole in a test 660 feet from the north and south lines of the John E. Workman 40 acres, Section 21. The same company drilled a duster in a test 500 feet from the north line and 400 feet from the east line of the Thomas E. Partlan 45 acres, Lot 64, Montville Township, Medina County. In Chatham Township, same county, the Star Oil Co., is drilling No. 6 on the S. J. Kent lease, in Tract 15, Lot 57.

The Logan Gas Co.'s test 1,350 feet from the north line and 1,010 feet from the west line of the W. B. and M. E. McKee 269 acres, Section 16, Perry Township, Coshocton County, is a duster. Bell Brothers are drilling a second test in the southeast corner of the William Johnson 125 acres, Section 4, Newcastle Township, same county.

In Hardy Township, Holmes County, the East Ohio Gas Co. has started the drill at No. 1 on the Christian E. Schlarb & Co.'s 100-acre lease, Section 19, and No. 2 on the Harvey Bell 100 acres, Section 29.

In Athens County, Carthage Township, the Fairfield Gas Co. is drilling a test 538 feet from the south line and 944 feet from the west line of the McKinley 101-acre farm, Section 2, and R. E. Hamrick and others are drilling No. 2 well, 260 feet from the north line and 1,360 feet from the west line of the C. D. Swartz 46 acres, Section 36.

Hulse & Kundtz, contractors of Cleveland, are starting a test on the southwest corner of the J. Jenkins 30 acres in Lot 28, Dover Township, Cuyahoga County, and the East Ohio Gas Co. is starting a test 1,200 feet from the south line and 100 feet from the west line of the E. I. Gifford 170 acres, Lot 87, Strongville Township, same county.

In Monroe Township, Holmes County, the Empire Gas & Fuel Co. is drilling a second test in the southwest corner of the U. S. Davenport 36 acres, Lot 4. East Ohio Gas Co. is drilling No. 6 in the northeast corner of the Wayne F. Kendall 168 acres, Section 17, Prairie Township, same county.

Offside Development

In Alexander Township, Athens County, the Townsend Oil & Gas Co.'s No. 7 Eliza Smoot farm, Section 24, is reported at 5 bbls. Givins and others are drilling No. 4 Elsworth McNight farm, same section, and Ronshausen and others are drilling No. 9 W. D. Whaley farm, same section. Ohio Oil & Gas Co. is drilling No. 4 well 45 feet from the north line and 2,845 feet from the east line of the M. Jones 49 acres, same section. In Section 19, Athens Township, same county, Bickle and others are drilling No. 4 well, 166 feet from the south line and 1,600 feet from the east line of the Kate Niggemeyer 57 acres in Fractional Lot 73.

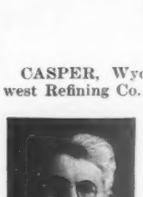
The East Ohio Gas Co.'s No. 4 Dan

(Continued on Page 142)

PRORATION LIFTED IN SUNBURST FIELD; PRODUCTION INCREASES

By Frank B. Taylor

CASPER, Wyo., Mar. 20.—The Midwest Refining Co. plans to drill 376 wells in the Salt Creek Field this season. This includes wells to all sands and the wells will be located on the Midwest holdings in the central field.



Last year the Midwest Refining Co. planned and drilled about 450 wells in Salt Creek as its annual program. The number of wells for 1926 has been reduced because the Midwest has a sufficient supply in sight for all needs for the coming year and even at present should occasion demand, the production of the field could be nearly doubled by opening the wells already drilled to the Lakota sand and pumping the upper sand wells to their capacity.

In the Fort Collins Field in Colorado, the Union Oil Co. of Colorado has completed its program for the coming season and will drill 17 more wells in that field this year. As the wells in the Fort Collins Field average 4,500 feet or deeper the Union's program will involve nearly as great an expenditure as the Midwest Refining Co.'s in Salt Creek.

The outside oil companies operating in Salt Creek have not as yet made their drilling programs for this year, but it is considered that outside of the Midwest Refining Co., the number of wells to be drilled will be nominal.

Wyoming Situation

In the Wyoming fields outside of Salt Creek, no definite programs have been made as yet by the oil companies and but little development is expected as these fields are outlined and the demand for the production is practically stationary. Rock River Field markets most of its production to the Laramie refinery of the Standard Oil Co. of Indiana. Lost Soldier sends its crude to the Producers & Refiners' plant at Parco and to the Salt Lake refinery of the Utah Oil & Refining Co. at Salt Lake City. Grass Creek and Elk Basin crude is taken care of at the Greybull refinery of the Standard of Indiana and the rest of the Wyoming fields place most of their oil at the Wyoming refining points of Laramie, Greybull or Casper.

The field expected to become most active in new development in Wyoming is the LaBarge in the southwest corner of the State.

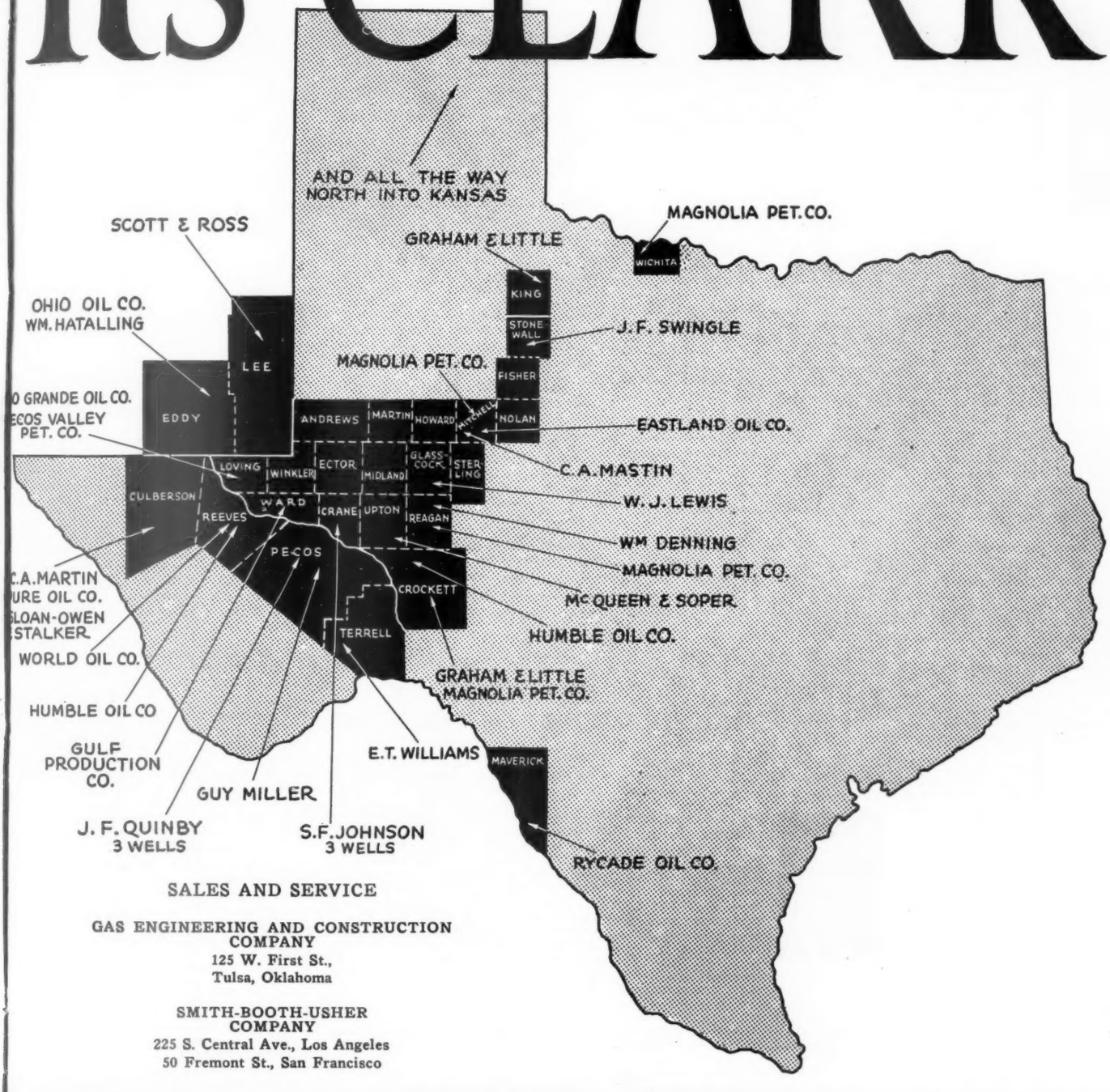
On the Cane Creek Dome in eastern Utah, south of Moab, in Grand County, the drillers are still working on the two joints of collapsed 10-inch at the bottom of the discovery well. The Midwest Refining Co. and the Utah Southern Oil Co. have started another joint well on what is known as the Shaffer Dome, about 5 miles southwest of the discovery well on the Crane Creek Dome. This location is on Section 16-27-21 and the pay is expected about 2,250 feet as the Shaffer structure is somewhat deeper than Cane Creek, where the pay came in at 2,028 feet.

The new well started with a 15-inch hole and completion is expected about the last of July. The Shaffer Dome is one of the five structures located in the district south of Moab. Should all these structures prove productive, the area will make a field of considerable size.

Travel to the district is becoming heavy for the means afforded. The gasoline boat that plys between Moab and the Crane Creek well is usually booked ahead and other means to reach the well are employed by many oil men and others interested. George T. Hansen, president of the Utah Southern Oil Co., tried the airplane for covering the territory with disastrous results. The gasoline feed line

(Continued on Page 129)

It's CLARK



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S ENGINES

Southeast Ohio Has 300-Barrel Well

Hocking County Also Reports One Making 175 Bbls., and Muskingum One at 225 Bbls. Pennsylvania-West Virginia Field Report

By D. S. Wakenight

PITTSBURGH, Pa., Mar. 22.—The feature of the week of development work in the eastern fields was the number of good producers completed in the deep sand territory in southeastern Ohio. No other section had anything better to offer than light pumpers. Many of the West Virginia completions consisted of gas wells of the average size. The refineries are taking a little more crude than for some time past and all are stocked up with gasoline and prepared for the increased spring demand. Despite unfavorable conditions that now prevail, operators and producers still cling to the opinion that the year will in the end prove more satisfactory than the one that preceded.

With an improvement in conditions the old fields will be tested more closely and there will be an incentive for wildcatters to go out and search for new producing territory. There are few localities that promise to give the desired results but nevertheless will be tried out. The chances for new pools in southwest Pennsylvania are very small and aside from the deep sand territory in southeastern Ohio, little to encourage operators. West Virginia is the one best bet for new producing territory.

Best Completions

As previously stated the deep sand territory in southeastern Ohio furnished all the best completions of the past week.

In the northwest quarter of Section 14, Washington Township, Hocking County, the Gordon Oil Co. has completed and shot in the Gordon sand No. 4 on the W. L. Wagner farm. It responded with a production of 300 bbls. the first 24 hours after shot. The location is 750 feet east of No. 3 on the same farm. With a single exception this is the largest deep sand well completed since the first of the year.

The Gordon Oil Co. is again in luck at its second test on the James Noble heirs farm, in the southeast quarter of Section 14, same township. The well produced 110 bbls. the first 24 hours after drilled through the Clinton sand and 175 bbls. the ensuing 24 hours after given a shot. The location is 700 feet east of the company's second test on the George Anthony farm.

M. F. Whitehill's test on the J. Boyer farm, in Section 6, Hopewell Township, Muskingum County, produced 225 bbls. the first 24 hours. Recently Hopewell Township has been completing more than the usual number of good wells.

In the northwest quarter of Section 28, Coal Township, Perry County, the Big Ten Oil & Gas Co. got a producer good for 95 bbls. a day when it completed in the Clinton sand its No. 3 on the Hazelton heirs farm. The location is in defined territory. In the southwest quarter of Section 13, Bowling Green Township, Licking County, the Midland Oil & Gas Co.'s No. 5 on the Murray Bowser farm is a 50-bbl. producer and has a strong gas pressure.

Shallow Sand Completions

The shallow sand districts made a poor showing. In the southeast quarter of Section 19, York Township, Morgan County, the Arkansas Oil & Gas Co. completed in the Berea grit No. 3 on the B. L. Stoneburner farm and has a gasser good for 800,000 feet. In Lot 286, Sutton Township, Meigs County, W. N. Hivis has completed in the Cow Run sand a test on the J. T. Hartley farm. It is a gasser good for 700,000 feet and a very light show of oil.

In the northeast quarter of Section 6, Enoch Township, Noble County, C. D. Harper & Co. completed in the Buell Run sand a second test on the Forest Moore farm. It is a duster, having found practically no sand. In the northwest quarter of Section 19, Sutton Township, Meigs County, Simon Lebow and others have started to drill another test on the C. and F. Holter farm.

Week-End Completions

At the close of the week of development work in the southeastern Ohio fields the shallow sand territory completed the best wells. In the east side of Section 21, Newport Township, Washington County, Patterson, Riggs & Todd completed and shot in the Maxon sand No. 5 on the H. R. Greene farm. It is a producer good for 30 bbls. a day. This is the largest producer Washington County has completed in a great many months.

In the southeast quarter of Section 28, York Township, Morgan County, the Pure Oil Co. has a 30-bbl. producer in the Berea grit at No. 9 on the William Epply farm. In Union district, Knox County, the Ohio Fuel Supply Co. has completed and shot in the Clinton sand a test on the Robert Neiderhouser 60 acres good for 15 bbls. a day.

Dusters in Athens County

In the Fisher Pool, Section 24, Alexander Township, Athens County, C. H. Beasley & Co. completed No. 9 on the W. D. Whaley farm. It is a duster. In the same pool, Section 34, same township, Harmond & Co. completed a test on the H. Riley farm and had the same luck.

In Section 23, same township, the Ohio Oil & Gas Co. is drilling No. 4 on the F. R. Baker farm. One mile west of production on the W. Huggins farm, in the northeast quarter of Section 15, Washington Township, Hocking County, the Cottrill Oil & Gas Co. has completed a test on the J. C. Cottrill farm. It is a duster in the Clinton sand at a total depth of 2,845 feet.

In the deep sand territory in Section 8, Hanover Township, Licking County, M. F. Whitehall & Co. completed and shot in the Clinton sand No. 6 on the Florence H. Stitt farm. It responded with a production of 60 bbls. the first 24 hours. In the central part of Section 14, Jackson Township, Noble County, Clyde Hutcheson and others completed and shot in the Macksburg 800-foot sand a test on the Abel and Elmer Wagner farm. It is a very light pumper. In the Fisher Pool, Alexander Township, Athens County, the Townsend Oil & Gas Co.'s No. 8 on the Elizabeth Smoot farm is good for 5 bbls. a day in the Berea grit.

In the southwest quarter of Section 21, Morgan County, the Sun Oil Co. has completed and shot in the Berea grit No. 10 on the Amos Souders farm good for 10 bbls. a day. In the northwest quarter of Section 29, same township, the same company has a 10-bbl. pumper at its No. 4 on the Joseph Longstreth farm.

In the Fisher pool, Section 24, Alexander Township, Athens County, the Ohio Oil & Gas Co. completed and shot a second test on the R. W. Jones farm good for 10 bbls. a day in the Berea grit.

Deep Sand Duster

In the southeast quarter of Section 16, Perry Township, Coshocton County, the Preston Oil Co. has drilled through the Clinton sand a test on the Nora McKee farm. It is a duster at a total depth of 3,228 feet. Only a very light gas pressure was developed at this location. The hole has been plugged and abandoned. In Section 21, Adams Township, Guernsey County, the Big Lime Oil Co. is due in the Clinton sand at a test on the William Knight farm. In Section 13, the Ohio Fuel Gas Co. has started to drill a test on the M. H. Brayden farm.

In Reading Township, Perry County, the Rush Creek Oil & Gas Co. has started to drill a test on the William Love farm. In Union Township, Knox County, the Pure Oil Co. has the rig completed for a second test on the W. D. Heaton farm. In Brown Township, Knox County, the East Ohio Gas Co. has the rig completed for another test on the George A. Richert farm. In Section 22, Noble Township, Noble County, Ted Brown and others are drilling a test on the Abagail Thomas farm.

West Virginia

The West Virginia fields had very little to offer during the week. The best were two fair producers, one good for 48 bbls. and the other a little less. The better of the two is the Philadelphia Oil Co.'s second test on the D. Stalnaker farm in DeKalb district, Gilmer County. The well produced 48 bbls. the first 24 hours after completed and shot in the Clinton sand.

In the Goose Creek Field, Grant district, Ritchie County, the Big Four Drilling Co. got a 40-bbl. producer when it completed and shot in the Big Injun sand a test on the D. C. Newbrough farm. In Harper district, Roane County, the Green Creek Oil & Gas Co.'s test on the William Fields farm is dry in the Big Injun sand and drilling to the Berea grit. In Reedy district, the Heck Oil Co. has drilled through the Berea grit at a test on the B. L. Morford farm. It is a fair gasser.

Showing for Fair Producer

In Clay district, Wetzel County, the Johns Gas & Oil Co. has drilled a test on the Littel farm into the Gordon pay and the hole filled 1,000 feet with fluid the first two hours. In Center district, the Hope Natural Gas Co.'s No. 4 on the J. K. Long farm is showing a little oil in the Gordon sand.

Marshall County

In Liberty district, Marshall County, W. A. Evans & Co. have a duster in the Gordon sand at a test on the W. E. Parriott farm. In Union district, Kellinan & Co. have a very light show of oil in the Big Injun sand at a test on the Mary E. Rice farm. In Battelle district, Monongalia County, the Cleveland-Cameron Gas Co. has a fifth sand gasser at a test on the S. W. Gilmore farm.

In Church district, Wetzel County, S. W. Stockdale and others have made a location on the William Hixenbaugh farm. In the same district, the Round Bottom Oil & Gas Co. has made a location on the Lewis heirs farm. In the same district, J. B. Ornduff & Co. are due in the Big Injun sand on the Emma Kirkhart farm.

On Poca Fork, Elk district, Kanawha County, the South Penn Oil Co. has completed in the Berea grit a test on the Lincoln Dodd farm. It is a gasser good for 465,000 feet. This location is 2,500 feet northeast of the same company's test on the John A. Dodd 56 acres. In Grant district, Ritchie County, Arnold Adams and others have drilled their test on the Joseph Ingram farm through the Squaw sand and dry in all sands. In Murphy district, Hays & Roberts completed a sec-

(Continued on Page 74)

THIRD POOL IN BARREN COUNTY, KY., FOUND SINCE FIRST OF THE YEAR

Vern T. Whitney

WINCHESTER, Ky., Mar. 22.—A few days of sunshine have improved the highways to a great extent throughout the producing regions of both Kentucky and Tennessee and more oil men have been seen scouting around than since early last fall. Plans were made for a large amount of test work during the winter, but conditions were such that the work could not be done to good advantage. All sections of Kentucky are in for a good play during the current year, not alone in the close proximity to the defined oil producing areas, but far away in counties virgin to the drill. It is announced that the Northern Co. is negotiating for a large block of territory in Clay County, in the southeastern part of Kentucky, with a view of striking a sufficient quantity of natural gas to supply the city of Knoxville and intermediate territory to that city and the construction of a pipe line from Clay County, Kentucky, to Knoxville, Tenn. Clay County during the past few years has developed some good gas wells of quite large volume. Clay County adjoins Jackson and Owsley Counties on the south and is directly north of Knox County. Paying production has been found in both Owsley and Jackson Counties as well as Knox County, hence, operators are of the opinion Clay County will also develop commercial oil, not being far removed from the Drip Rock oil wells of Jackson County. In Laurel County, directly west of Clay, the Standard Oil Co. of Kentucky is down around 700 feet with its second test, about 10 miles southwest of London, the county seat. A showing of oil was found in its initial test at 720 feet. Much leasing has been done in Knox County, where the Indian River Dome was mapped some months ago by the State Department. Arrangements are being made for the drilling of a test near the Knox-Whitley County line, close to the town on the L. & N. railroad known as Woodbine. The test will be drilled on the Perkins 500 acres.

The important find of the late completions was the Esslinger Oil Co's. test on the Jones farm, in the Lecta Pool a few miles to the southeast of Glasgow, in Barren County, which is credited with a flush of 50 bbls., and opens up what is considered a new producing area. Another interesting find, although a small well, was that of Baker and others along the Tomkinsville Road, which runs from Glasgow to Tomkinsville. This well was reported at 3 bbls.

Week's Work

A summary of the week's work in the Kentucky-Tennessee fields show 19 completions, 13 producers with a flush of 106 bbls and 6 dry holes. Compared with the previous week, this is an increase of 3 completions, 4 more producers, 37 bbls. more production and one less dry

(Continued on Page 82)

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MEN KNOWN IN OILDOM

John R. Suman

John R. Suman, vice president and general manager of the Rio Bravo Oil Company, was born in Daleville, Ind., April 9, 1890. His father, G. O. Suman, was engaged to some extent in the natural gas business in Indiana and one of his earliest recollections as a boy is of playing around the derrick floor. He entered the Muncie, Ind., high school in 1905, but in 1906 he moved to Los Angeles, Calif. He graduated from the Los Angeles high school in 1908. In 1912 he graduated from the College of Mining of the University of California.

In December, 1912, he was married to Beatrice Mowers. Mr. Suman is the proud father of two sons, John Robert, Jr., age 9, and Richard Harlan, age 5.

Mr. Suman, who was made vice president and general manager of the Rio Bravo Oil Company in May, 1925, and has been associated with this company for about 12 years, his first connection being in 1912 when he was employed as assistant geologist under Prof. E. T. Dumble and made chief engineer in 1913. Mr. Suman left the Rio Bravo in 1917 to become technical superintendent of the Roxana Petroleum Corporation in Texas and Louisiana, but returned to the Rio Bravo late in 1919 as assistant manager, later additionally assuming the same position with the East Coast Oil Company of Mexico, another of the Southern Pacific subsidiaries. The East Coast in 1923 moved its headquarters to Tucson, Mr. Suman relinquishing his office with that organization. In addition to his other duties he has been for several years general superintendent in Texas for the Associated Oil Company of California.

Mr. Suman is well and favorably known to oil operators on the Gulf Coast and is a member of the American Association of Petroleum Geologists; of the American Institute of Mining and Metallurgical Engineers and is a former president of the Houston Geological Society. He has written quite a few technical articles on petroleum production engineering subjects and is the author of a book entitled, "Petroleum Production Methods."

PERSONAL PARAGRAPHS

Ed Mott of Copleston, Ont., has left via New York for Venezuela.

* * *

M. R. Singleton of Toledo, Ohio, well-known refiner, is making a business trip to the East.

* * *

R. J. Moore, general manager of the Dayton Pipe Coupling Company, Dayton, Ohio, is in the Mid-Continent territory on a week's business trip.

W. C. Brower, manager of the crude oil department of the Vacuum Oil Company, New York, was a recent visitor to Houston and the coastal pools.

* * *

Superintendent Moon of the White Plains Oil & Gas Company in the western Kentucky Field, is reported quarantined with a slight case of smallpox.

* * *

M. F. Brennan, Tulsa branch manager of the Bradford Motor Works, is making a tour of the Rocky Mountain territory in the interests of his firm.

* * *

S. M. Kennedy was recently reelected as a director of the Pacific Gasoline Company, the largest producer of natural gas gasoline on the Pacific Coast.

* * *

Albert Wetherholt of Huntington, W. Va., is in Owensboro, Ky., for a few days looking over his leases in the Dermot territory of the Owensboro district.

* * *

John L. Sybrandt, district manager of the Ludlow Valve Manufacturing Company, Kansas City, Mo., is making a business trip through Mid-Continent territory.

* * *

R. C. L'Heureux, formerly special representative of the General Petroleum Corporation, has succeeded W. D. Ellinger as dealer sales manager at Oakland, Calif.

* * *

R. H. Smith of Philadelphia, president of the Oklahoma Company, and discoverer of the Wewoka Field, spent several days in Oklahoma recently and has returned East.

* * *

E. R. Davis, superintendent of the tankage department of The Texas Company at the Port Arthur refinery, attended a conference at the general offices of the company in Houston.

* * *

Simon Fisher, son of Mr. and Mrs. S. S. Fisher of Falcon, Ky., who recently left for Texas, has joined the accounting department of the New Domain Oil Company at Cisco, Tex.

* * *

Clarence A. Leeper, president of the Leeper Oil Company, with headquarters at Owensboro, Ky., left for a several weeks stay at Hot Springs, Ark. Mrs. Leeper accompanied her husband.

* * *

S. V. Stewart, vice president and general manager of the Ajax Iron Works, Corry, Pa., was in Tulsa and other points in the Mid-Continent during the past week in the interests of his concern.

* * *

J. C. Wadsworth, well-known coastal contractor and driller, has returned to Houston from Giddings, Leon County, Texas, where he was called to assist in testing a wildcat well. It came in a water well.

* * *

W. T. Janes, engineer; E. V. D. Johnson, station constructor, and E. M. Baker, superintendent of construction of the Crusaders Pipe Line Company, with headquarters at Monroe, La., were recent visitors to Shreveport.

* * *

T. B. Hoffer of Fort Worth, Tex.; Earle M. North of Fort Worth; W. L. Dean of Tulsa, Okla., and F. W. Meeseiner of Wichita Falls are back from a trip to the oil fields of Mexico and stopped over at San Antonio, Tex.

* * *

Thomas C. Morgan, president-treasurer of the Spice Knob Oil & Gas Development Company of New York, is spending some time in the Owensboro Field of western Kentucky, where his company has producing properties.

* * *

Thorne L. Wheeler of Arthur D. Little, Inc., has been appointed by Gen. Amos A. Fries as one of the consultants for the chemical warfare service. Mr. Wheeler is a specialist in the activation of carbons which are used for gas masks.

* * *

A. W. Chandler, formerly zone agent of the Gypsy Oil Company at Ponca City, Okla., has been transferred to the Tulsa office and placed on the staff of B. F. Bridges, Jr., head of the land department. Amos Guthrie, for three years in charge of the Gypsy office in Gallup, N. Mex., has replaced Mr. Chandler at Ponca City.

George Perdun, general manager of the Illinois Pipe Line Company, is in the Sunburst Field, Montana, looking over the plant and lines of the company there. W. A. Miller, president of the company, is with Mr. Perdun.

* * *

Frank Ketch, an oil man of the Ardmore district, Oklahoma, accompanied by his family, is on a winter tour of the Southern Seas. Before returning he will have visited South and Central America and the West Indies.

* * *

J. C. Donnell, president of the Ohio Oil Company, has left his home town of Findlay, Ohio, for Ormond Beach, Fla., where he will be the guest of John D. Rockefeller. He was accompanied by W. A. Hollington, Findlay banker.

* * *

W. E. Dunlap, chief geologist of the United Oil Company, the holding company for Richfield Oil Company, third in point of gasoline sales in California during the past year, is making a tour of the company's holdings in San Joaquin Valley.

* * *

Jim Lee, well-known shooter in the Allen County, Kentucky, Field, has been transferred and has taken charge of the new magazine of the Kentucky Glycerin Company, Inc., near Whitesville, in the Owensboro district, with headquarters at Whitesville.

* * *

C. N. White of California and Texas with production in the Lytton Springs district in Caldwell County, Texas, passed through San Antonio recently from California en route to Venezuela where he proposes to look over the oil possibilities.

* * *

Dr. R. Brauchli of Tulsa, formerly with the Pure Oil Company, has been employed as chief of the geological department of the Anderson-Prichard Oil Corporation in Oklahoma City. He is a native of Switzerland and a graduate of the University of Bremen.

* * *

John B. Chapman, formerly of Bradford, Pa., but now of Cincinnati, Ohio, visited Sistersville, W. Va., recently. In the early days of the oil excitement of Sistersville, Mr. Chapman was one of the participants in the famous Ludwig and Mooney lawsuit. Ludwig and Mooney were both residents of Toledo, Ohio.

* * *

Herbert Conley of Abilene, Tex., who was a pioneer in the coastal development before locating in other fields, visited Houston business friends recently. Mr. Conley's connection with the industry goes back to the active days in western Pennsylvania and West Virginia, where he was a driller and contractor.

* * *

C. J. Webster of the National Oil Company, which recently opened headquarters and main office in San Antonio, Tex., moving there from Kansas City, has been sick with the "flu" for a few days following a trip to Chicago. His company is about to announce three tests in South Texas, the first the company will drill.

* * *

C. R. Vinton, who has been superintendent of the Depew, Okla., district of the Pure Oil Company, has recently been promoted to assistant to R. E. Andrew, general superintendent of production, at the Tulsa office of the company. E. L. McIntyre, who has been superintendent of the company's Healdton district, has been transferred to Depew to succeed him.

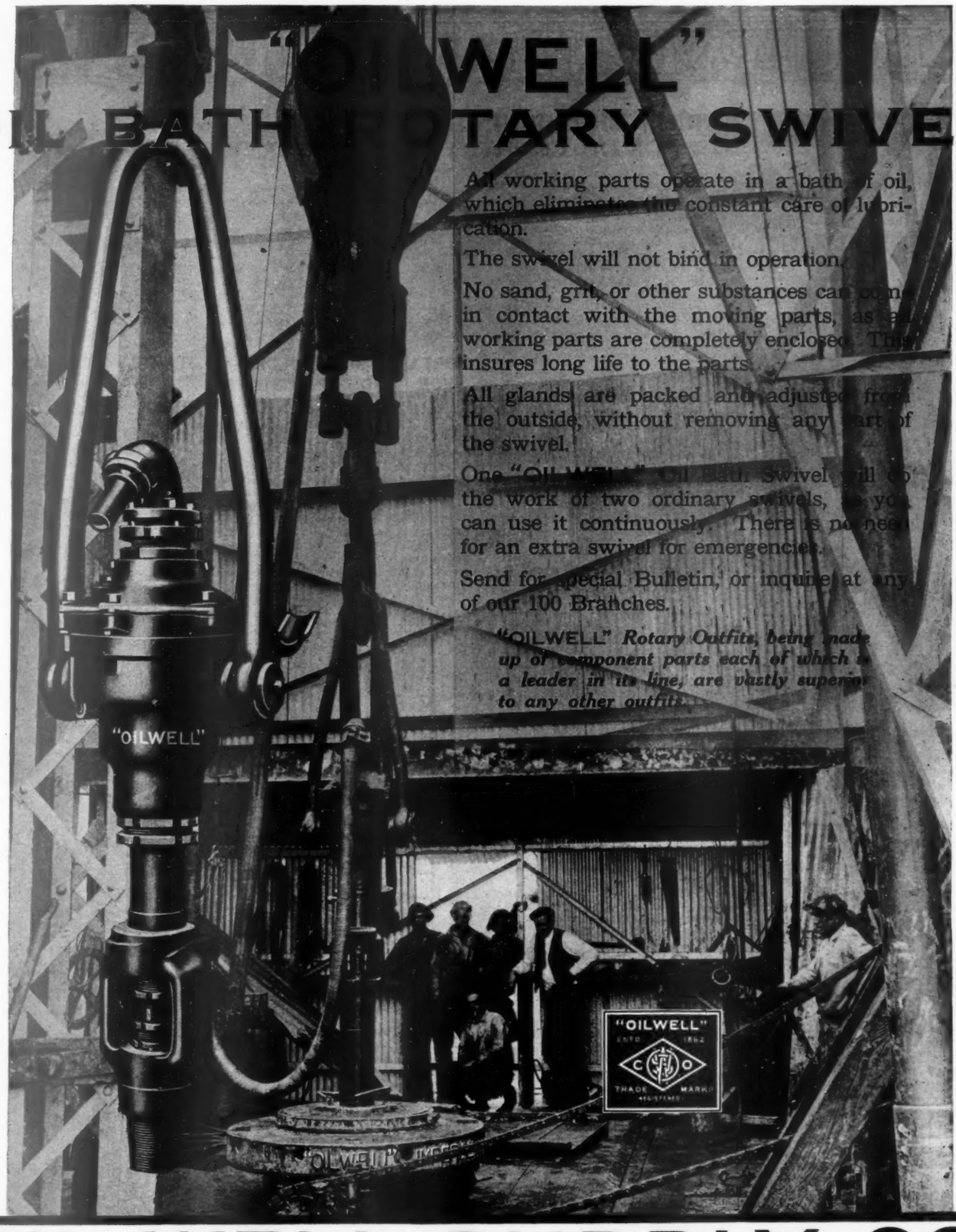
* * *

Dave Browning, president of the Venus Oil Corporation, an old-time operator of Ashland, Ky., spent some few days looking over the prospects at Saginaw, Mich., where four commercial oil producing wells have recently been brought in. Mr. Browning has been operating in the Berea and Weir sand fields of the Big Sandy Valley in eastern Kentucky for a number of years.

* * *

R. D. Allen of Fort Worth, Tex., who has represented the Powell Valve Company of Cincinnati for many years and who has a wide acquaintance with oil operators and purchasing agents in every oil field in the country, is recovering from an attack of influenza. Charles Cullen, another popular representative of the same company, is recuperating from an attack of the same malady at his home in Covington, Ky. He was stricken at New Orleans.

"OILWELL"
OIL BATH ROTARY SWIVEL



All working parts operate in a bath of oil, which eliminates the constant care of lubrication.

The swivel will not bind in operation.

No sand, grit, or other substances can come in contact with the moving parts, as all working parts are completely enclosed. This insures long life to the parts.

All glands are packed and adjusted from the outside, without removing any part of the swivel.

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WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT

EQUIPMENT AND SUPPLIES

GAVE UP BASEBALL TO SELL OIL WELL CHAIN

Charles E. Markey of Indianapolis, specialist in oil well chain for the Link-Belt Co., started his career in his chosen field in a unique manner. After graduating from school in Indianapolis he accepted a contract from the Galesburg Baseball Club and was soon embarked upon a career of stardom in professional baseball.

Hydrocarbons and phosphates, alternating in their interest with hoists and lathes, produced, in Mr. Markey's mind, a diversification of interests. Written up

Charles E. Markey

in the newspapers as the "Gentleman Ball Player" and "Professor the Silent," it was small wonder that, after being bought by the Indianapolis club, due to his reputation as a timely hitter and polished first baseman, Mr. Markey's fame should have been spread throughout the Link-Belt Co.'s Indianapolis plants.

Shown how he might well combine his varied interests to good advantage in business, Mr. Markey forsook baseball to start in at the bottom at the Ewart plant of the Link-Belt Co. Between 1916 and 1921 he became successively inspector, assistant chief inspector and then chief inspector. Soon after, Mr. Markey joined the sales department and made a detailed study of the particular needs of the oil industry. Since this time Mr. Markey has brought about a very material increase in the sale of Link-Belt oil well chain.

SPRAY NOZZLE SHOWN

The Power Plant Equipment Co. of Kansas City, Mo., has issued a booklet on the Marley spray nozzle and cooling equipment. The booklet is very complete and gives special mention of the unusual features of design in the nozzle. The large rectangular shaped inlet throats and the large bottle shaped upper whirl chambers are illustrated. The nozzles have no internal parts, no bent arms, and have large free passages.

DIESEL ENGINE TEST

The Worthington Pump & Machinery Corp. is completing at Buffalo, N. Y., a 30-day, continuous full load test run of the Diesel engine being built for installation in shipping board vessels. The engine is 34 feet long and 25 feet high, with six cylinders, weighing 600,000 pounds, and developing 16,000 horsepower. It was arranged to offer an opportunity to American Diesel engineers generally to observe its running operation.

MARKED BROADENING IN INQUIRY FOR OIL COUNTRY TUBULAR GOODS

By B. E. V. Luty

PITTSBURGH, Pa., Mar. 22.—There has been a marked broadening in inquiry for oil country tubular goods in the past few days, while in actual bookings by mills there is no particular change since the first of this month. During January and February buying was rising steadily from a very low level to a moderately high one, considering the time of year, unfavorable for drilling, and the fact that jobbers have been indisposed to stock up against spring trade.

Occasional orders for line pipe have been placed in the past few weeks but there has been no buying of much consequence since about the beginning of February, when several large orders were placed. Some large pipe line projects are in contemplation but there is no definite indication as to when orders are likely to be placed.

Demand for merchant pipe has shown no particular improvement lately, though it has been running a trifle heavier than in January. Jobbers in merchant pipe are doing business on a close margin as to stocks, being indisposed to carry stock to any extent, and distribution is relatively light, as would be expected at this time of year.

Operating at 80 Per Cent

For about 30 days past pipe mills have been operating at an average rate of about 80 per cent, there being no definite upward trend as there had been previously. In December operations were at only about 60 per cent and part of the production was going into stock. Now the shipments are fully equal to production, so that there has been a great increase in shipments.

Mill prices on merchant pipe and oil country goods are very steady and on a firm basis relative to lists which are now nearly three years old. Prices have been so well maintained, when various other steel products have declined so notably in the past three years, that each pipe mill is anxious to maintain the situation, realizing how well it is worth preservation.

In the steel market generally there is a steady flow of business, in new orders and in specifications against contracts. All the commitments, except for construction material, are for very early delivery and evidently for prompt consumption. While the mills have to keep up their sales work aggressively they are rewarded by tonnage and are able to maintain operations very well, the pace being a very high one.

Steel Trade Steady

The notable feature of the steel trade, indeed, which distinguishes it from all other recent periods, is the remarkable steadiness of production, there having been no material change for some five months. In the past, production has almost always been either increasing or decreasing. This time the mills reached a high rate and have maintained the rate, steel production in the past five months having been slightly above that in any previous five-month period, even though the highest rate of the past has not been struck.

Steel prices are equally steady. In most lines, as in tubular goods, there is no question about prices. In sheets and plates there have been some variations, but there is no change in the past two or three weeks even in these lines.

Lettings of fabricated structural steel jobs in the past three weeks were particularly large, and brought the weekly average since January 1 up to the average of 1925, which was a record year in fabricated steel by a margin of 12 per cent.

The Southern Railway has ordered 2,250 freight cars, the Southern Pacific 1,600, and the Nashville, Chattanooga & Western 300, making 4,150 cars reported in the week, and making a total of 26,000 cars ordered since the first of the year. Car buying has been at a very fair rate since November 1.

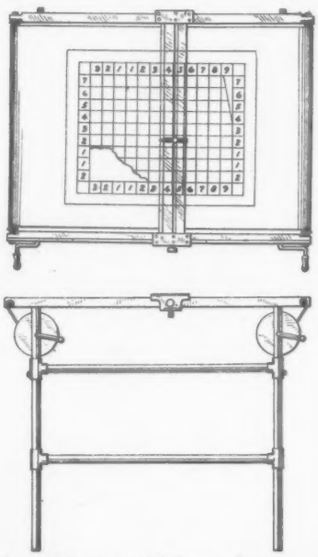
Pig iron continues dull in all markets, with prices firmly held.

Connellsville coke is steady and dull, with standard furnace coke at, $3.25 and foundry at $4.50 to $5.00 for spot or prompt shipment.

PORTABLE MAP HOLDER FOR LAND DEPARTMENTS

A novel device in the form of a portable map holder with a "finder" attachment, designed to be particularly useful in land departments of the oil industry, has been invented by W. J. Morris, head of the land department of the Continental Oil Co., 528 Patterson Building, Denver, Colo. It is claimed that, after several months' usage, the device has been found to be very practical, and almost indispensable as a means for having state maps always convenient, and also a means of locating instantly thereon any township or town.

Briefly described, the device consists



of a table supported by a plurality of legs, with rollers attached underneath and near the ends of the table. The "finder" attachment consists of a slide, or straight edge, extending to the slide and movable transversely—north and south. A strip of cloth or paper with a map, or series of maps, printed or mounted thereon, which is to be used in connection with the device, is attached to the rollers and travels across the table. When it is desired to locate any certain township on the map, the strip is run across the table until the proper state is arrived at; the slide is then moved to a column of township numbers, and the pointer is fixed at the proper township; the slide is then moved into the proper range, and the pointer rests at the township desired. This whole operation of first finding the state, then locating thereon any certain township or town requires a matter of only a few seconds. It is claimed that with a strip containing 13 maps, representing an aggregate of approximately 26,000 townships, any one of the townships can be located on the map within a maximum of 10 seconds.

This device is being used in the land department of one of the large oil companies as a part of its index system. For instance—in each square representing a township, (varying from ¼-inch to ½-inch square) is a figure or a set of figures which represent the plat book page or the number of another large scale map, showing the township on a large scale. Another figure or set of figures, in another color, may relate to some other data—such as geological report covering, etc. The device has been built of dimensions to accommodate standard maps, such as are found in Rand McNally's standard atlas. It is the intention to eventually build the device to accommodate sectional state maps.

STARTS WORK ON LOOPS FOR BIG LAKE LINE

HOUSTON, Tex., Mar. 20.—The Humble Pipe Lone Co., is starting work on loops along its present 8-inch line from Comyn to Big Lake, Reagan County. The loops will aggregate 150 miles of line. When they are completed the line will have a capacity of 30,000 bbls. per day instead of 20,000. Much of the mechanical equipment will be moved from other lines. Tank car shipments from the Big Lake Field now aggregate 5,000 bbls. per day and the looping will save heavy freight charges.

The Magnolia Petroleum Co. is laying 10 miles of 4-inch line from its tank farm at Mirando City to the Cin-Tex Petroleum Co.'s well near the Duval-Webb County line. The well will be opened and gauged when the line is completed. Estimates of its capacity vary from 1,000 to 5,000 bbls.

The Magnolia Co. has seven 55,000-bbl. steel tanks at its storage farm at Oilton, near Mirando City.

The Houston Pipe Line Co., a natural gas subsidiary of the Houston Oil Co., has started a preliminary survey for a 80-mile extension of its gas line from Lucas, Live Oak County, south to the Webb County gas fields.

The Houston-Gulf Gas Co. (Moody & Seagraves) will probably extend its gas line southwest to Webb County from its present terminus in Refugio County. The distance is approximately 120 miles. The rock pressure at the wells in Refugio County is decreasing since the Houston Pipe Line Co. has been drawing on its supply there and piping it to Houston for industrial consumption.

TRACTOR WINCH USED IN KENTUCKY'S HILLS

TORRENT, Ky., Mar. 20.—Although in general use in some sections of the country, the tractor winch is being operated by Petroleum Exploration Co. for the first time in the mountain regions of Kentucky. Recently the Clark winch mounted on a Fordson tractor was purchased by the Petroleum Exploration and placed on its big lease at Lecco, Ky. It is used for pulling rods and tubing and displaced the old method of using horses. In addition a collapsible mast is being built on the lease, which can be attached to the tractor and transported from one well to another. This will do away with the stationary masts and the cumbersome affairs hauled around.

The Clark winch is mounted on the front end of the tractor, which additional weight is an advantage in pulling heavy loads. All gears are eliminated and an all-chain-drive system used. The winch is controlled from the tractor seat, the operator being in full view of his work. On the right hand side, the counter shaft is equipped with "cat head," which is keyed to shaft and is used for many purposes. The engine is cranked from this point which prevents kicking back. On the left hand side of tractor a disk is keyed to the counter shaft from which power may be taken off for driving low-down pumps.

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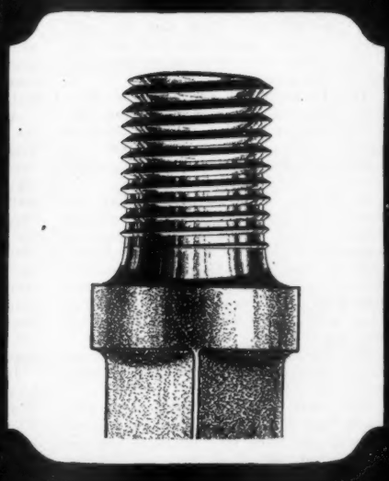

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Mid-Continent Office: 1023 Kennedy Building, Tulsa, Oklahoma
Mid-Continent Distributors: Frick-Reid Supply Co.
Eastern Distributors: Frick & Lindsay Co.
Casper, Wyoming, Office: With Frick-Reid Supply Co.
New York City Office: 30 Church Street

NATURAL GAS DEVELOPMENTS

NATURAL GAS DECLINE IN ONTARIO IN 1925

By Victor Lauriston

CHATHAM, Ont., Mar. 20.—Ontario's production of natural gas in 1925 was placed at 7,040,565,000 feet, valued at $3,888,397, according to a bulletin issued by Charles McCrea, minister of mines for Ontario. The figures, compared with those of 1924, represent a decline of 330,340,000 feet, and a loss in revenue of $187,607. While the natural decline of well-flow accounts for some measure of this lessened consumption, conservation methods practiced by consumers are chiefly responsible. The rise in natural gas rates is said to have stimulated drilling operations, and some good wells have been secured in Middleton Township, Norfolk County. From this new field pipe lines connecting with Simcoe, Tillsonburg and Aylmer have been laid. Actual improvement in transmission, rather than the mildness of the weather, is given credit for the infrequency of complaints registered by natural gas users this winter regarding low pressure in the mains. Col. R. B. Harkness, natural gas commissioner for Ontario, has had an inspector visit all the fields from Niagara to Sarnia to insure proper pressure arrangements. In the helium survey of Canada's gas fields, which was conducted by the Mines Branch at Ottawa, three natural gas wells were found in Caledon Township, Peel County, which had a helium content of 0.8 per cent—a higher percentage than any discovered hitherto in the British Empire. In the near future a plant will be built at this point for purposes of helium recovery and other experimental work to be conducted under the supervision of the Research Council of Canada and the University of Toronto.

The Canadian Western Natural Gas, Light, Heat & Power Co., which supplies gas to Calgary, Lethbridge and intermediate points in Alberta, enjoyed a very successful year in 1925, according to the report of President C. J. Yorath at the annual meeting at Calgary. To the end of 1925, covering a period to 15 months, the earnings amounted to $1,616,816, compared with $951,735 in the preceding year. During the period of the report there were more new consumers of gas and the revenue from consumption of gas was greater. After expenses, payments for gas, allowances for depreciation, etc., there was a balance of $484,175, compared with $12,377 in the previous 12 months.

In order to make use of the gas at Turner Valley, which had previously been burned, and thereby conserving for future use the gas in the company's own wells, an agreement was entered into with the Royalite Oil Co. to take the gas at a price of 10 cents per 1,000 feet up to a consumption of 3,500,000,000 feet per annum, with a price of 9 cents per 1,000 for any additional quantity used.

Drilling operations have been continued by the company in the Foremost Field, two additional wells having been drilled. Indications are that this field does not contain the volume of gas at first anticipated. This can only be proven by actual operations. In order to insure a sufficient and continuous supply of gas, the company constructed a separate 10-inch transmission line from Turner Valley to Calgary. This line was built by a subsidiary company and was acquired at cost. Steps are being taken to locate further supplies of gas.

After completing an agreement with the Royalite Oil Co. for the purchase of gas from the Turner Valley, a controversy arose with the city of Calgary as to rates, and the directors finally decided to make a reduction from 48 cents to 43 cents per 1,000, net. In consideration of this reduction the city agreed to a definite submission to the jurisdiction of the Board of Public Utility Commissioners; so that in future all questions of rate adjustments will be submitted to the board for its decision.

NATURAL GAS FIELDS OPENED IN RUMANIA

A local newspaper describes the opening of new natural gas fields to the east of those of Siebenbuergen, the great Hungarian (now Rumanian) district so long famous for this product. A geologist, Johan Banhai, operating for the Bucharest Geological Institute, has made these discoveries. The turning to account of the Siebenbuergen natural gas is still a question not completely solved by Rumania, as the laying of pipe lines and the utilization of this natural wealth has not progressed to any great extent. Matters connected with the change of state ownership from Hungarian to Rumanian, as well as the accompanying increase of the price of the gas, have delayed further development. Those entrusted with responsibility know very well that the gas fields are not inexhaustible, depending as they do on the quantity of gas used and the quantity available. Hence a reluctance to organize a wide distribution until a large future supply has been well assured.

The already developed gas fields are utilized to a quite sufficient extent for prudence, says the London Oil News, and if more gas is to be used, more fields ought to be discovered. But it is not very well known that in the eastern basin of Siebenbuergen four natural gas zones are waiting to be opened, while the neighborhood has a quantity of raw material waiting to be worked up with the aid of such fuel. In the east basin there is an abundance of cheap labor for commercial enterprises. At present the question is being asked whether delivery to present consumers is to be improved or to suffer in quantity. In particular, the forthcoming increase in the price of the gas is ground for criticism as a measure taken by the new Rumanian company in which the Rumanian Government holds 75 per cent of the shares.

TO SELL ROOK GAS

HOUSTON, Tex., Mar. 20.—Permission to market the gas from Nos. 4 and 6 Rook, in the Refugio County Feld, which have been in the hands of a receiver pending the disposition of litigation in Federal Court, was given by Federal Judge J. C. Hutcheson following a hearing. T. W. Gregory, former attorney general of the United States and receiver for the wells, was given permission to market the gas and to drill four new wells on the contested land. Permission to recondition No. 4 Rook, also was given. The gas is to be sold to any company ready to receive it. The Houston Gulf Gas Co. and other Seagraves interest are parties to the litigation, and claim a right to the gas by virtue of a lease.

GAS FOR BEEVILLE, TEXAS

SAN ANTONIO, Tex., Mar. 20.—Houston Oil Co. has closed a contract with the city council of Beeville, Tex., in Bee County whereby the Houston Pipe Line Co. is given a franchise to furnish natural gas to the City of Beeville on the same terms as the franchise recently given the concern by the city council of Victoria. The Houston Pipe Line Co. is a subsidiary of the Houston Oil Co. which has recently completed a pipe line for natural gas from the Cartwright Field in Live Oak and the Refugio Field in Refugio County and is now in operation furnishing gas to industries in Houston and elsewhere. The line from the Live Oak County gas field passes a short distance south of Beeville.

REFUGIO COUNTY GAS FOR ONLY TWO YEARS

HOUSTON, Tex., Mar. 20.—David Donoghue, geologist and engineer, has completed a survey of the Refugio County gas field that is not very encouraging for the gas companies having holdings there.

The report states the gas supply will be exhausted in two years, this estimate being based on the present withdrawals of gas by the Houston Pipe Line Co., a natural gas subsidiary of the Houston Oil Co. That company is now taking approximately 40,000,000 cubic feet per day from the field, piping it to industries along the line between Refugio and Houston. The Houston-Gulf Gas Co. has wells in the field, but has not yet started to pipe it because its line is only partially completed towards Houston. With two companies drawing from the Refugio County Field the depletion will be hastened and will take less than two years, probably one year. Mr. Donoghue says:

"The original rock pressure is said to be about 975 pounds per square inch. At the time the first gas was run from the field the pressure had dropped to 860 pounds, due to the waste of gas through the numerous wild wells. On March 1, 1926, the rock pressure was approximately 670 pounds and about 3,250,000,000 feet of gas had been delivered to the Houston Pipe Line Co. During the month of February, 1926, the Houston Pipe Line Co. received an average of 28,500,000 feet per day. The working pressure is estimated to be declining at the rate of about one pound per day.

"It will probably be necessary to install compressors within the next six or eight months if the present rate of decline continues."

Further in his report Mr. Donoghue refers to the depletion of the area:

"———Under these conditions the field has a supply of 22,000,000,000 feet of gas on a 2-pound basis. This is a two years' supply assuming only a continuous production of 30,000,000 feet per day. The Houston Gulf Gas Co. will require at least 10,000,000 feet per day to supply the City of Houston when its line is completed.

"The Houston Oil and Houston Pipe Line companies are now delivering 40,000,000 feet, and within the next 30 days expect to deliver about 60,000,000 feet to the various industries in and around Houston.

"It is reasonable to expect that the Houston Oil Co. will take gas from the Refugio Field, where it is subject to competitive conditions, and hold its Lucas Field in Live Oak County in reserve. This means rapid depletion of the Refugio Feld, and the companies operating there will have to look elsewhere for their gas."

Mr. Donoghue concludes his report with a survey of other supplies of natural gas in this section:

"The only other commercially producing gas fields that might be linked up with the lines into Houston are the Lucas Feld, 40 miles west of Refugio, and the various gas fields in Webb and Duval counties, 110 miles southwest of Refugio."

GAS ZONE IN NEW AREA OF SIGNAL HILL FIELD

LOS ANGELES, Calif., Mar. 20.—The presence of a gas zone of terrific pressure in the new area of the Signal Hill Field, northwest of the old producing district, was demonstrated by the series of eruptions affecting half a dozen wells which resulted in tipping over one derrick, and in the destruction by fire of another.

The burning of the No. 5 Coombs with a loss estimated at $50,000 was the direct result of a sudden increase in gas pressure in the well, which ruptured an oil line and released a stream of oil, which became ignited by accident. The fire was the most spectacular in the history of the new field, and threatened to destroy a number of other wells in the vicinity.

About the time the fire occurred a number of other operators in the neighborhood noticed a sudden rise in gas pressure, and in the No. 5 Johnson well this activity got beyond control with the result that within a few hours the derrick foundations were undermined, and the entire structure collapsed.

In the No. 1 Jones well of the Associated Oil Co. the gas pressure reached a point where operating officials deemed it advisable to take the well off production entirely to safeguard it against a blowout, and possible ignition. Water was pumped into the well and the flow was killed for a brief time.

The presence of a gas zone in this area has been known to operators for several months at least since the No. 4 Johnson blew out and ran riot for several days. The Johnson well was junked by the eruption, but the most important effect, according to general geological opinion, was the loosening up of the gas formation, allowing the gas greater freedom. The result has been an increasing tendency on the part of drilling wells to blow out upon reaching the gas zone, which is between 3,500 and 4,000 feet deep.

MONROE GAS OPERATORS STILL HOPE FOR OIL

MONROE, La., Mar. 20.—With the Urania oil field in the limelight, oil operations in the vicinity of Monroe are drawing increased attention and the belief, long held, that an oil pool will eventually be found near the Monroe gas field is gaining headway.

An added impetus to this belief was given when Hunt and others' No. 1 Urania, Section 7-10-2e, was brought in with production of 500 bbls. daily. This well is nearly four miles north of Tullos, where the activity has been greatest, and indicates the possibility that the oil strata will be found at other points further north toward Monroe.

About 20 miles west of Monroe, near the eastern border of Lincoln Parish at Tremont, The Texas Oil Co. is putting down a wildcat, surface casing having been set and the drillers are down around 500 feet. A careful study of the area adjoining this wildcat has been made and the result will be watched with interest.

Closer to Monroe than La Salle Parish to the south is the operation being started by J. D. Dixon and others, in the extreme southern part of Caldwell Parish, near Olla. This test is not far from the old Bur Ban locations where showings of oil were made.

In addition, operators are noticing the increased drilling in the gas field. This new campaign is being undertaken in the Swartz area and while ostensibly made for gas, oil indications are being watched for carefully.

UPHAM GAS LINE

OKLAHOMA CITY, Okla., Mar. 20.—The Upham Gas Co. of Mineral Wells, Tex., beginning operations at Shamrock, has spread over several Texas Counties and now purposes laying a pipe line into Wichita Falls. It is said to have placed pipe on the ground over part of the right of way. At Wichita Falls the company will first meet competition of large gas distributing concerns. The Upham Co. has secured franchises at Shamrock, Memphis, Childress, Wellington, Quanah, Chillicothe, Vernon and smaller towns. It owns a gas plant and a brick plant at Mineral Wells.

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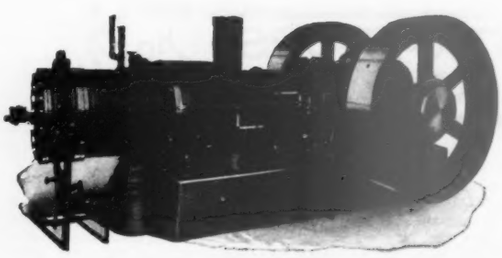


PRESSURE IS MASTER FUNCTION IN RESERVOIR; VOLUME IS SUBORDINATE

By Stanley C. Herold
Petroleum Geologist, Stanford University, California

Two interesting experiments were performed simultaneously in the year 1859. Jamin in Paris contributed to science by his work on capillarity, while Drake in Pennsylvania contributed to industry by drilling the first oil well. Today, 66 years after, we are attempting to draw these experiments together, and show that they were fundamentally related, in spite of the different purposes held in the minds of the two men at the time.

Is it difficult to recognize the identical phenomena in these two experiments? What difference if one apparatus had 60 or 300 globules, whereas the other possibly had a million? And one was a single tube, while the other consisted of a bundle of them in a radical arrangement? Jamin dealt in pressures and volumes measured in millimeters of mercury and cubic millimeters of fluid; Drake was concerned with hundreds of pounds per square inch and hundreds of barrels of oil. The discrepancy in quantitative values was great; yet the oil and gas came from the well in the same manner, and according to the same laws, as the fluid escaped from the end of the tube. The relative variations in pressure, volume, velocity, acceleration, energy and power, were identical in both experiments. We shall eventually prove more than this, for we shall show that events within the oil reservoir were certainly identical with events within the capillary tube, regardless of the fact that we cannot peep into such a large, buried reservoir as we can into the smaller, transparent one. The functions which we measure at the two orifices cannot vary identically unless events within the reservoirs are identical.

It is a late day to bring the work of Jamin and Drake together, but it is certainly not too late. There yet remain great quantities of oil and gas to be produced from our natural reservoirs.

Volume-Time Relations

588. The analytical process employed in deriving the pressure-time relations at the orifice of a capillary tube (Articles 577, 578, and 579) is applicable in the derivation of volume-time relations, provided we introduce calculus. It is necessary that this be done, on account of fundamental, analytical differences between the functions of pressure and volume. Pressure is the master function in a reservoir; not until pressure is in equilibrium can the reservoir be in equilibrium. Volume is a subordinate function; where pressure leads, it follows. Volume is a mere tool of pressure, for the latter shifts the former from one position to another for the sole purpose of gratifying its own desire; to-wit, the attainment of a lowest possible value for itself.

With this conception in mind we may understand that the pressures within the individual spaces of a capillary tube can be satisfied when each space delivers more fluid to its neighbor on the downstream side than the amount it receives from the neighbor on the upstream side. This is to say, the potential volume actually produced by the spaces decreases progressively from the orifice of the tube outward. This is the condition shown by "Volume Distribution" in Figure 568. The progressive decrease in potential volume agrees with a statement in Article 579 to the effect that, as time elapses, the state of equilibrium is established progressively from the outermost space to the space at the orifice. It would be well to carefully compare such behavior with that of the hollow reservoir of Figure 431.

589. Rather than attempt to introduce calculus into a direct derivation of volume-time relations, we have considered it advisable to introduce it into the computation for pressure-volume relations (Articles 568 and 569) and combine the result with pressure-time relations. The process seems simpler by this indirect method.

We may write the formula between pressure and time thus:

$$P=K_1T^2, \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

and that between pressure and volume thus:

$$P=K_2Vo^{1/3}. \quad \ldots\ldots\ldots\ldots (2)$$

The right-hand members of these equations may be equated:

$$K_2Vo^{1/3}=K_1T^2. \quad \ldots\ldots\ldots\ldots\ldots (3)$$

By squaring both sides of this equation, and combining constants into the simple K, we have

$$Vo=KT^6. \quad \ldots\ldots\ldots\ldots\ldots\ldots (4)$$

The result agrees with equation (6) of Article 561.

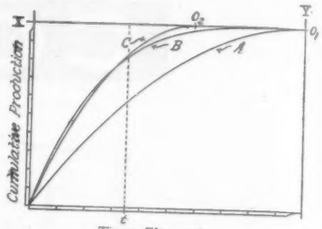


Figure 590

590. The formula expressing volume-time relations only holds, of course, so long as the functions are measured in potential units. Its curve is a fourth-power parabola, with a vertex on the X-axis at the right, a point denoting equilibrium for the reservoir under the given conditions of a constant back pressure unaltered during the course of production.

The inverted volume-time curve is the cumulative production curve. Suppose two reservoirs, one of Volumetric Control and the other of Capillary Control, should happen to have the same length of life and the same total volume. In Figure 590 the curve A is the cumulative production curve for the reservoir of Volumetric Control, and the curve B is the cumulative production curve for the reservoir of Capillary Control. Under the supposed conditions the two curves are obviously quite different.

Now let us suppose that the life of the Volumetric Control reservoir is such that the vertex of the parabola falls at a point O_2, instead of O_1. Its cumulative production curve is consequently the curve C. The difference between B and C is not striking. If we do not know the potential life of a particular reservoir, and we merely plot cumulative production from zero time elapsed until some time t, how may we determine from the curves alone whether the reservoir is of one or of the other control? It is evident that the eye is not competent to properly judge the control from this plat. However, by using the parabolic-logarithmic plat, we should have a straight line with a slope of four to one for B, or a straight line with a slope of two to one for C. There should be no difficulty in making the proper decision respecting the control, if logarithmic paper is employed.

The Relative Curve

591. What parameter will provide the conditions that

when $x=0$, $y=0$
and when $x=100$, $y=100$

in the equation of the fourth-power parabola? By inspection, or by formula of Article 478,

$$K=10^{8/4}=10^{-2};$$

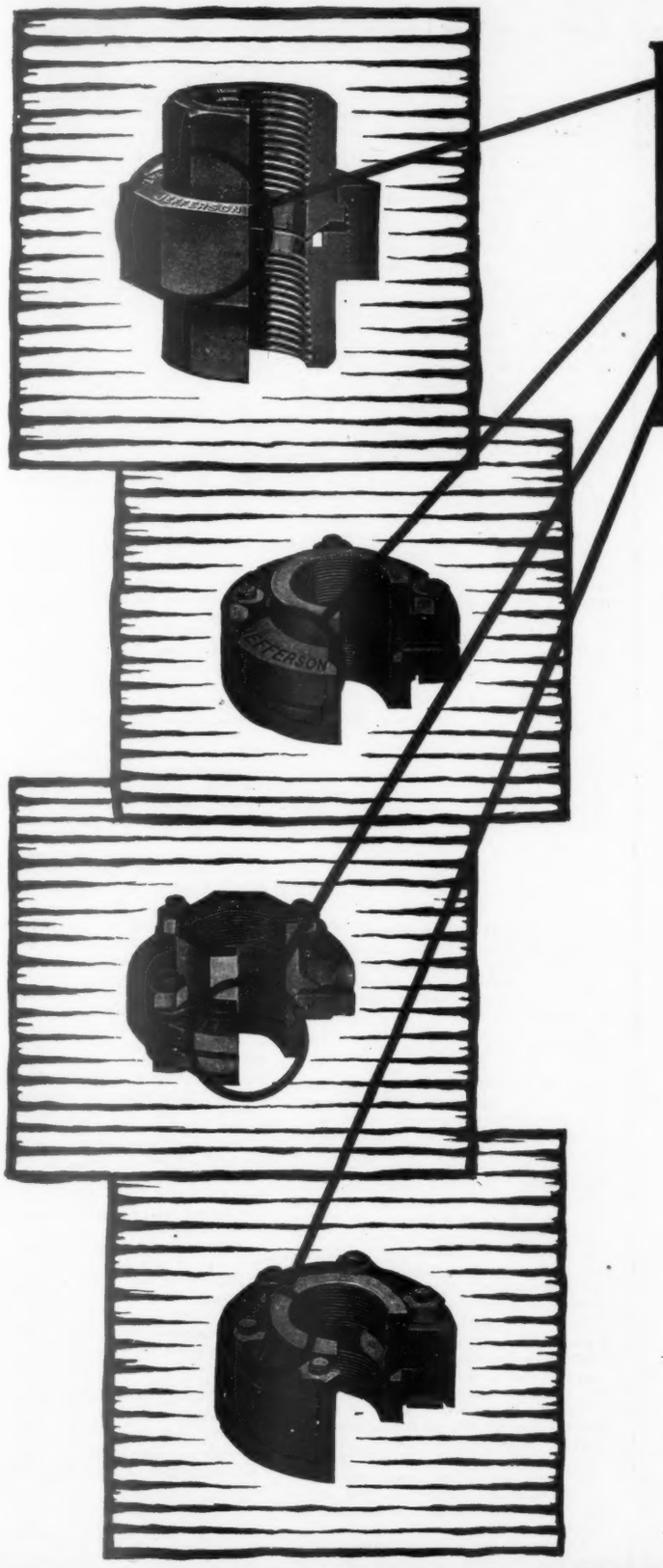
so the equation for the relative curve is

$$Vo=1/10^{2}T^4.$$

The potential volume in per cent is equal to one divided by one million, multiplied by the fourth power of per cent time remaining. The curve was shown in the charts of Figures 586 and 587. (This relative curve is identical with the one for energy-time relations in Volumetric Control.)

The Fluids Produced

592. A well in Capillary Control may produce gas alone. In such case the



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liquid—oil, condensed vapor, or water—which forms the globules is not sufficient in quantity to require more space for occupancy than that offered by the capillary channels connecting the pores of the formation. When only gas is produced, the relative curve for volume and time pertains to the quantity of such gas yet to be produced from the reservoir, as of some particular instant T.

A well in Capillary Control may produce both liquid and gas. In this case the liquid which forms the globules is greater in amount than the total space offered by the capillary channels. This liquid not only occupies the channels, but a portion of the pore space as well. (Article 580). When the well is thus a combination well, the relative curve for volume and time pertains to the quantity of liquid yet to be produced from the reservoir, as of the particular instant T. The gas-volume curve is now the energy-time curve for this control, in the same manner as we found for reservoirs which produce both fluids in Volumetric Control.

A well in Capillary Control cannot produce liquids alone. It is the gas which is liberated from solution upon the decrease of pressure, which offers the minute free surfaces to the liquid, thus providing the so-called Jamin Action. Furthermore, gas is the sole source of energy within a reservoir of this control. (Article 577). If no gas is present, no energy is present; in such a case there can be no reservoir in the sense we have agreed upon. (Article 38.)

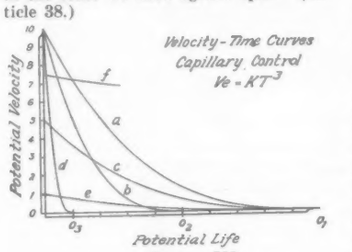

Figure 593

Velocity-Time Relations

593. By differentiating the equation between volume and this with respect to time, we obtain the equation between velocity and time. The first equation may be written thus:

$$Vo = K_1 T^4,$$

which becomes by differentiation:

$$Ve = K T^3,$$

where the constant K is now 4 times K_1. This equation agrees with the one found in Article 558. Samples of curves in accordance with these relations, representing rate of production curves in field practice, are shown on a Cartesian plat in Figure 593. All are cubic parabolas, each having a corresponding pressure-time curve in Figure 420, the latter having been shown to be representative of both finite controls. (Article 583.) If the data furnishing these curves were plotted upon logarithmic paper, we would have a series of parallel straight lines with a slope of three to one, as the line ac in Figure 558. The distances between the parallel lines would be determined by the values of the parameters in their respective equations.

The cubic parabola, being of higher power than the true parabola, must underlie it, when both are drawn with the same intercepts on the X and Y axes. Therefore the rate of production curve for reservoir of Capillary Control underlies the pressure curve, whereas the rate curve for reservoirs of Volumetric Control overlies the pressure curve. This fact was illustrated in Figure 236. The curves of the present figure all underlie their respective curves of Figure 420.

Resemblance to Hyperbola

594. The middle portion of a cubic parabola appears to have a bow which approximates that belonging to the hyperbola. This approximation is accentuated by conditions which must now be considered.

In Figure 594 we have the cubic parabola drawn with respect to the potential X-axis. The ordinate for any point a is y when the velocity is measured in potential units. Now suppose that this curve is the rate of production curve for a gas well, and instead of plotting potential velocity, we plot open flow measurements. Then the ordinate for any point a is y″, measured from an X″-axis which is determined in position from the absolute axis by the constant back pressure of the atmosphere. The curve is not affected in any manner by plotting these values. It is merely "raised" to a higher location from the line we are now using as an axis for abscissas. The result is, however, to give the curve an appearance of a hyperbola, for it does not seem to approach the axis in mind sufficiently rapid to be taken for a parabola.

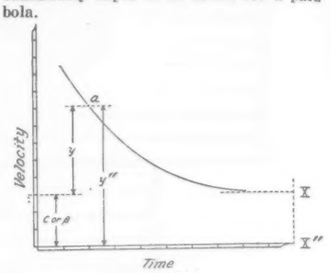

Figure 594

It is indeed possible to see some of the characteristics of the exponential curve in this figure. If the curve is extended upward to the left, and drawn to intercept the line of the vertical scale, then the curve will appear to fulfill exponential properties.

595. If back pressure is applied to an oil well during the course of production, and this pressure is removed periodically for the purpose of obtaining a record of the well's status as time elapses, such a record is in fact one of open flow. This practice is identical with the accustomed practice in gas fields, and the curve determined by the data must appear as in Figure 594 with respect to an X″-axis at a distance c below the true mathematical axis of the curve.

In case the oil or gas well produces vapors, the X″-axis may then be the true axis of equilibrium for the reservoir. Vapor raises the curve from the axis through a distance beta, equal in value to a velocity corresponding to the vapor pressure. There is a mathematical X-axis above the one used for plotting, and the equation of the curve relates to it. The vertex being approached marks the point in time when the change is made from a saturated to an unsaturated condition within the reservoir. Thereafter a new curve is described, one which actually has its vertex upon the lower axis.

The effect of vapors was discussed in Articles 185 to 200, inclusive. The investigation was confined to the consideration of the absolute and potential pressure-volume curves of Volumetric Control. It is possible to apply the same principles to the potential pressure-volume curve of Capillary Control, and extend the work so as to include the primary function curves having abscissas in time. Thus we would come to understand the raising of the velocity-time curve by vapor pressure.

The point of present interest is the fact that, whether the curve is raised by a constant back pressure c, or by a vapor pressure beta, the curve does approximate the appearance of the hyperbola.

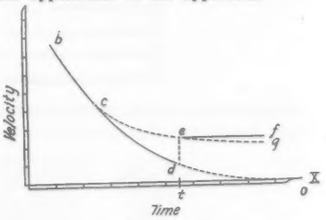

Figure 596

596. Our present methods of curve drawing leave much to be desired. We plot our data and connect the points by smooth curves to the best of our ability, using the eye for a guide to what we

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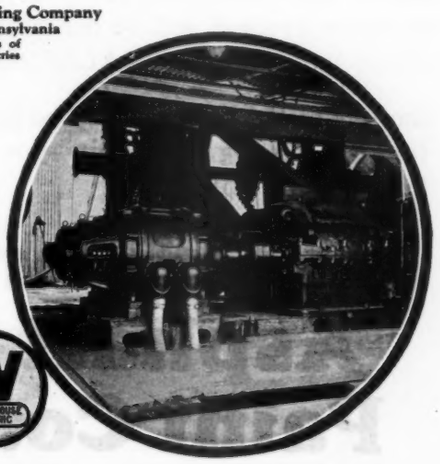

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Figure 596 illustrates a typical procedure. An oil well flows without pumping, and its curve of decline is recorded from b to d, the latter representing a low rate of flow at the time t when a pump is installed. The velocity is increased from d to e. Provided that the pump, operated at determined speed, does not exceed the capacity of the well at the new constant back pressure, the velocity curve will be a horizontal straight line from e toward f. The pump delivers oil at a constant rate.

While the true curve is bdef, belonging to two periods of time which are separated at t (Article 59), we smooth off the abrupt change at de by drawing a curved line ce. We are inclined to pass the curve through e, ignoring the pressure of d below, because we feel that we are drawing a more faithful curve by so doing. The well actually did produce at this rate for the instant t. Now our instinct tells is that there must be a decline from t onward; we therefore favor any points which happen to fall slightly below ef, or if we are extending the curve into the future, we favor a line which falls slightly below ef, thus obtaining the curve eg. The resulting curve of production, bceg, seems to approximate the hyperbola in appearance.

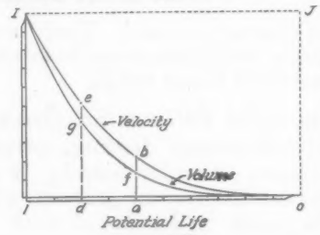

Figure 597

Area Under the Velocity-Time Curve

597. The area subtended by the velocity-time curve represents units of volume. A rate multiplied by time gives an amount of actual fluid. (Article 250.) The area under the velocity curve in Figure 597 may be imagined as made up of a great number of little rectangles, equal in area, whose altitude is one unit in velocity and whose length is one unit in time. Each of these little rectangles represents a unit volume of fluid.

The areas of definite sections under the velocity curve have a particular relation to corresponding ordinates on the volume curve. (Article 436.) In the figure the vertical scales are so proportioned as to bring their initial points together. This, as stated in the cited article, is only a matter of convenience, and is not at all essential. The following equation may be written:

$$\frac{\text{Area oab}}{\text{Area ode}} = \frac{\text{Ordinate af}}{\text{Ordinate dg}}$$

We can, by running a planimeter around such areas subtended by our rate of production curves, not only determine the volume to be produced from the well as of a particular date, but check the result against the cumulative production curve. The location of the point o is easily obtained from the relative curves of this control.

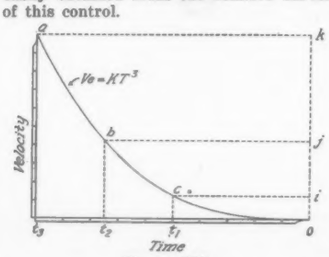

Figure 598

598. The area subtended by any parabola with the equation

$$y=px^n$$

is equal to the area of the rectangle enclosing its curve, multiplied by $1/(n+1)$. We found in Volumetric Control, where the exponent of the velocity-time curve is unity, that the area subtended by it is 1/2 the enclosing rectangle. Now the exponent is three; therefore the area subtended by the curve is 1/4 the enclosed rectangle. This law is based upon a principle in calculus—it is the same principle which caused the constant K_1 to be 1/4 of K in Article 593—and it holds for for any positive value of n, fractional or integral.

In Figure 598 the area under the curve extending from t_1 to O is

1/4 the area Ot_1ci,

the area under the curve extending from t_2 to O is

1/4 the area Ot_2bj,

and the area under the curve extending from t_3 to O is

1/4 the area Ot_3ak.

The times t_1, t_2, and t_3 might occur at any position along the horizontal axis of the curve. Thus we may approach a well in this control at any instant during its life and announce the fact that the total volume remaining to be produced from the reservoir is equal to one-fourth of the rate of flow at the instant, multiplied by the time remaining in its life. Time remaining may be easily determined from the relative curves. (Articles 584 and 585).

Comparison of Controls

599. This rule for computing the potential volume of a Capillary Control reservoir, for a given constant back pressure, like the corresponding rule for Volumetric Control reservoirs does not pertain to the gas volume, when the reservoir is a combination one. The gas volume, as before in such case, is to be calculated from the power-time formula.

The fact that the rules specify the fractions one-half and one-fourth for the two respective controls does not, in itself, give justification for making comparisons too freely. For example, if our well is of Capillary Control, we should not say that the well will produce one-half the volume which it would if it were of Volumetric Control. The potential volume of a reservoir primarily depends upon the amount of space occupied by the fluid in the reservoir,—the term reservoir being taken in its strict mathematical sense.

We shall find it convenient, however, to specify certain hypothetical agreements between two imaginary reservoirs, one of each control, for the sole purpose of elucidating definite principles regarding the one or the other, but it must not be supposed that such an agreement has probability of occurrence in practice.

The Relative Curve

600. The relative curve for velocity-time relations was included in the charts of Figures 586 and 587. The parameter for the curve is

$$K=10^{3\cdot6}=10^{-4};$$

therefore the equation is

$$Ve=1/10^4T^3.$$

The potential velocity in per cent is equal to one divided by ten thousand, multiplied by the cube of per cent time remaining. (This relative curve is identical with the one for power-time relations in Volumetric Control.)

Acceleration-Time Relations

601. As stated in Article 437, whenever the relation between velocity and time may be expressed by an algebraic equation, the first derivative of velocity with respect to time gives the rate of change of velocity; that is, acceleration. Now the equation between velocity and time for the present control may be written:

$$Ve=K_1T^3,$$

and this, when differentiated, becomes

$$Ac=K\,T^2,$$

an equation of the true parabola, where K is equal to 3 K_1.

It is evident that acceleration in Capillary Control is parabolic. Unless one is familiar with the function of acceleration, this statement may have very little significance. We become so accustomed to think of acceleration as encountered in problems concerning falling bodies, and in problems concerning Volumetric Control reservoirs, where it is constant, that we might be inclined to take for granted the fact that it is always constant in any

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mechanical system we may meet. This is not true. Whereas we have seen that the rate of production from the type solution and gas tanks of Volumetric Control declines by the same amount for each unit of time, it does not do so in the case of solution tanks of Sub-Volumetric Control. (Figures 467, 468, 469, and 470). Nor does it do so in case the reservoir is of Capillary Control. For these latter reservoirs the function of acceleration is mathematically variable. The rate of production declines by a different, definitely determinable amount at each instant during the life of the reservoir.

Examples of Acceleration

602. In Volumetric Control it is a simple matter to draw an analogy between the behavior of reservoir functions and the familiar behavior of falling bodies, or to be more exact, the behavior of rising bodies. (Articles 438.) There is probably no familiar mechanical system which may be cited for the purpose of drawing a similar analogy between its behavior and the behavior of reservoirs in Capillary Control. In order to comprehend the significance of the present acceleration let us strike a comparison between two imaginary reservoirs, one of each control.

Reservoir V. C. is of Volumetric Control. At some particular instant T in its life it is producing oil at the rate of 1,000 bbls. per day. Its life, measured from the same instant, is 3,000 days.

Reservoir C. C. is of Capillary Control. At the instant T in its life it is producing oil also at the rate of 1,000 bbls. per day. Its life, measured from the same instant, is likewise 3,000 days.

The velocity-time curves for these two reservoirs are given in Figure 602. For intervals of 300 days each we may tabulate the corresponding velocities of production as follows:

Time Remaining	V. C.	C. C.
3000	1000	1000
2700	900	729
2400	800	512
2100	700	343
1800	600	216
1500	500	125
1200	400	64
900	300	27
600	200	8
300	100	1
0	0	0

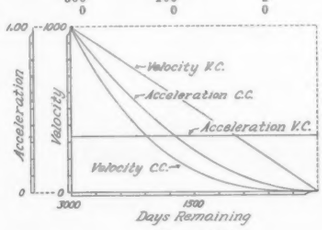


Figure 602

For each reservoir the velocity is different at every instant during its life; for example, the velocity at 1501 days is slightly greater than that at 1500 days, and the velocity at 1500 days is slightly greater than that at 1,499 days. But, to continue the same example, for the reservoir in Volumetric Control the decline in the rate between 1501 days and 1500 days is equal to the decline between 1500 days and 1499 days. This is to say, the decline in velocity—the acceleration—in this reservoir is constant. Such is not the case for the reservoir in Capillary Control. The decline in velocity between 1501 and 1500 days is greater than the decline between 1500 and 1499 days. Acceleration is not constant, but variable according to the very number of days remaining. In fact, we found it proportional to the square of the days remaining. Let us tabulate values for acceleration at the same 300-day intervals as follows:

Time Remaining	V. C.	C. C.
3000	0.33 1/3	1.00
2700	"	0.81
2400	"	0.64
2100	"	0.49
1800	"	0.36
1500	"	0.25
1200	"	0.16
900	"	0.09
600	"	0.04
300	"	0.01
0	"	0

For the reservoir in Capillary Control the decline in velocity, or acceleration, is different at every instant during its life. The decrease in the rate begins at 1.00 bbl. of oil per day for each day and ends at zero. The decrease in the rate for the other reservoir begins at 1/3 of a barrel per day for each day, and continues to do so constantly for every day until the end. (It does not drop to zero at the end, but remains its real value up to and including the instant of equilibrium.)

Figure 602 shows the two curves for acceleration in accordance with the table of their values.

Values of Acceleration

603. How were the values of acceleration in the preceding article determined? First we obtained the specific equations between velocity and time, then we differentiated these with respect to time in order to get equations between acceleration and time. Into the latter the proper values of T were substituted. The following is an outline of the process:

Substitute the known values of velocity and time into the general equations:

$1000=K_1\times 3000$, ...(1a)

$1000=K_2\times(3000)^2$. .....(1b)

Solve each for the value of the constant:

$K_1=1/3$, ...(2a)

$K_2=1/(27\times 10^6)$. .....(2b)

Now write the specific equations:

$VE=1/3\ T$, ...(3a)

$Ve=1/(27\times 10^6)\ T^2$. .....(3b)

Differentiate each of these:

$Ac=1/3$, ...(4a)

$Ac=1/(9\times 10^6)\ T^4$. .....(4b)

These are the equations of the curves in the figure. Equation (4a) shows a constant value, while equation (4b) is variable with time. Suppose we substitute the value

$$T=3000=3\times 10^3$$

into the last equation:

$Ac=1/(9\times 10^6)\times(9\times 10^6)=1.00$.

the first point of the C.C. acceleration-time relations was also included in the charts of Figures 586 and 587. The parameter for the curve is:

$$K=10^{2\cdot 4}=10^{-2};$$

therefore the equation is

$$Ac=1/100T^2$$

The potential acceleration in per cent is equal to one divided by one hundred, multiplied by the square of per cent time remaining. This curve coincides with the pressure-time curve in the same control.

Area Under Acceleration-Time Curve

605. The area under the acceleration-time curve represents units of velocity. Such areas must always be measured from the right-hand origin toward the left. In Figure 602 we may calculate the velocity at any time T on the horizontal axis by measuring the subtended area between the ordinates at O and T. Thus the velocity for the reservoir V.C at T=1500 is equal to

$1/3\times 1500=500$ barrels per day,

and at T=3000,

$1/3\times 3000=1000$ barrels per day.

Both these values are indicated on the proper curve in the figure. Again, for the reservoir C.C., at T=1500 the velocity is equal to

$1/3\times 0.25\times 1500=125$ barrels per day,

and at T=3000,

$1/3\times 1.00\times 3000=1000$ barrels per day.

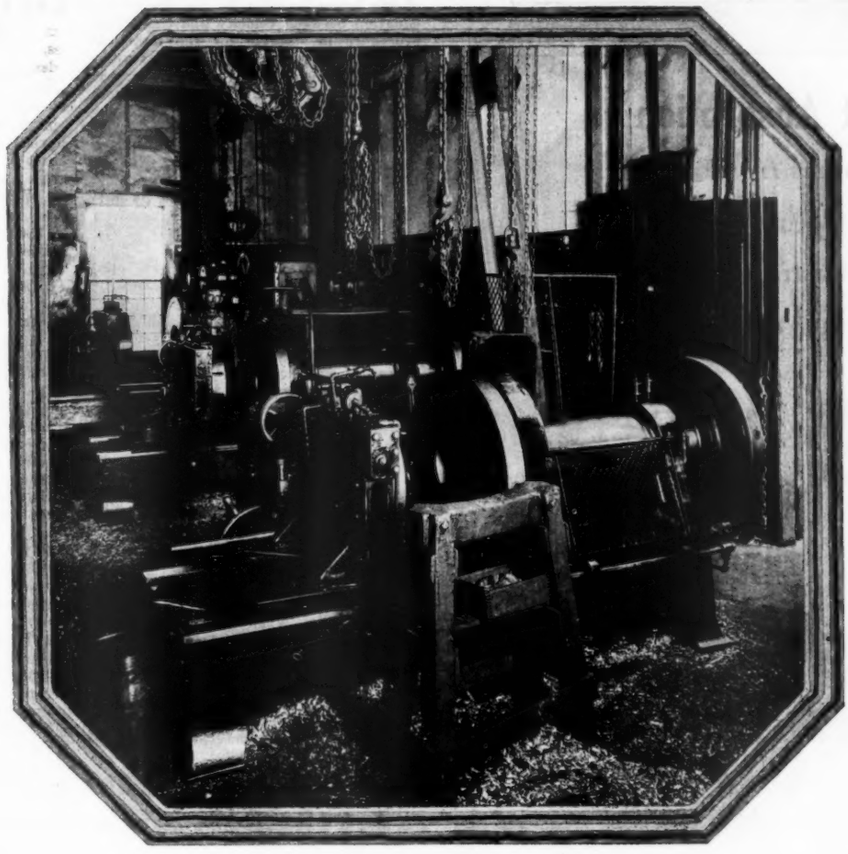
(The first term on the left is the constant of acceleration for the first reservoir, and the fraction of the rectangle enclosing the parabola for the second reservoir. Values of acceleration in the latter case are taken from the table in Article 602.)

The areas under the two acceleration curves for the entire period of 3,000 days are equal because of the fact that both reservoirs were stipulated to have 1,000 bbls. per day velocity of production at 3,000 days remaining.

We shall forego the presentation of a figure corresponding to Figure 597 where the curves shown should now be the acceleration and velocity curves for Capillary Control. By such a figure it may be shown that the areas under the former curve are proportional to the corresponding ordinates of the latter curve. This relation exists between all primary function curves whose exponents differ by unity.

Pressure and Acceleration

606. We established the analytical and geometrical relations between velocity and acceleration, and we determined values



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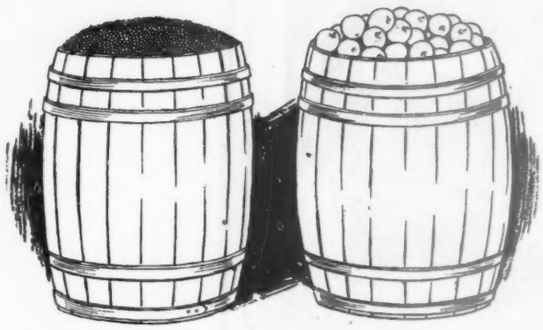
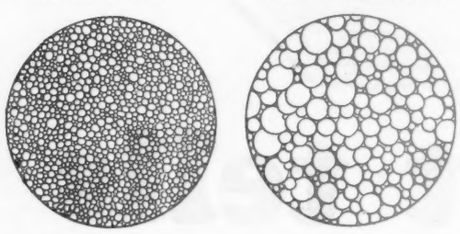


A barrel of peas contains little dead area.

A barrel of apples contains much dead area.



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of the latter function by the use of the equation between velocity and time. This procedure is suitable for the establishment of principles, but it is the reverse of the procedure desired in field practice. Instead of determining acceleration from velocity we must be able to determine velocity from acceleration, if the principles are to render us service. But how are we to measure acceleration without first measuring velocity?

Now we have found that the formula expressing the relation between acceleration and time; namely,

$$Ac=K_1T^2,$$

is the same formula expressing the relation between pressure and time; namely,

$$P=K_1T^2,$$

provided the reservoir is in Capillary Control. In the actual case they merely differ by having constants of unequal value. If we were to plot the two curves for these formulas, they would appear as in Figure 606. For the curves the following relations hold:

$$\frac{\text{Ordinate ab}}{\text{Ordinate de}}=\frac{\text{Ordinate af}}{\text{Ordinate dg}}$$

since they are of the same power; i.e., their exponents are identical. We may also say that

$$\frac{\text{Area oab}}{\text{Area ode}}=\frac{\text{Area oaf}}{\text{Area odg}}$$

for the same reason. By Article 605 we know that

$$\frac{\text{Area oaf}}{\text{Area odg}}=\frac{\text{Velocity at time a}}{\text{Velocity at time d}};$$

therefore it is true that

$$\frac{\text{Area oab}}{\text{Area ode}}=\frac{\text{Velocity at time a}}{\text{Velocity at time d}}$$

Thus we arrive at the conclusion that

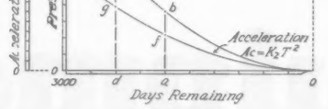


Figure 606

the areas subtended by the pressure curve are proportional to corresponding ordinates on the velocity curve. Indirectly, pressure multiplied by time is velocity. But this is true only for reservoirs of Capillary Control. (See Article 444.)

Pressures, which are so conveniently and so accurately observed in the field, render desired information concerning the rate of production. The ratio between velocities at any two instances during the life of the reservoir can be determined from the pressure curve, provided the reservoir is of the present control. Instead of measured acceleration we simply measure pressure. By carrying ratios the determination of the specific constants becomes unnecessary. It is true that we must know the position of the point which denotes the end of the life of the potential reservoir, but this is easily obtained from the relative curve for pressure.

Several previous attempts to diagnose and utilize the areas subtended by the pressure curves have failed, only because the analytical and geometrical relations between reservoir functions were not properly understood. If we take the data given in papers presented on the subject, and recast them according to the present principles, the results will verify what we have here determined to an extent which will leave no doubts in the matter.

ARGENTINA'S REPORT

WASHINGTON, D. C., Mar. 20.—During 1925 the market for lubricating oils and greases steadily improved in the Argentine and the total sales were at least 20 per cent higher than those for 1924. The total 1925 importation of lubricants amount to 7,110,250 gallons, compared with 5,848,350 gallons in 1924. The United States supplied about 90 per cent of these imports 6,413,400 gallons in 1925, and 5,522,000 in 1924. England furnished most of the remainder.

GAS LINE EXPANSION IN OKLAHOMA FIELDS

Problems vital to every phase of the public utility industry—and particularly to natural gas—were discussed at the eighth annual convention of the Oklahoma Utilities Association at the Hotel Mayo in Tulsa.

In his annual report, President R. C. Sharp, speaking of the natural gas division, said:

"Construction of gas pipe lines by established gas transportation companies operating in Oklahoma has involved the expenditure of approximately $5,000,000 during the past year. This expenditure, aq the public too often fails to realize, is made to protect service in towns already connected with gas transportation systems. This expenditure is necessary without prospect of new markets or of increased revenues,—merely to protect communities already served against failure of their usual gas supply. When an electric utility spends $1,000,000 it is to accommodate an increasing demand and a determining factor is the extent of possible additional revenues. The same is true in the manufactured gas industry, but not so in the natural gas industry. Each day sees its facilities for affording service diminished, and each year sees it compelled to make large expenditures to discharge its existing responsibilities.

"Oklahoma led the United States in natural gas production last year with 214,000,000,000 feet, California was second. California led the country in natural gas consumption, using 190,000,000,000 feet. Oklahoma was second, California consumed her entire production. Oklahoma exported 32,000,000,000 feet. The United States broke its record in gas consumption in 1924, using 1,141,000,000,000 feet. This figure was 13 per cent above 1923 and 100 per cent above 1914. Oklahoma is fourth in gas pipe line mileage.

"The natural gas industry is distinctive among the branches of the utility industry in that it cannot maintain a given relationship between supply and demand. At times it must strain its physical, its financial and its human power to meet the demand. At other times its problem is to care for the supply clamoring for a market.

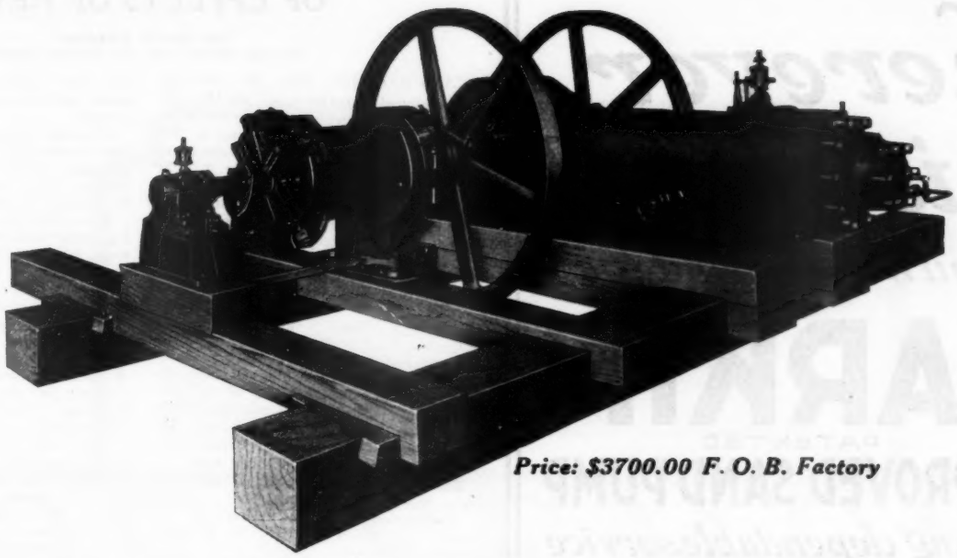
"The Gas Conservation School to be held annually at Bartlesville, grows out of the annual gas meter school held at the State University. The conservation school will be attended by gas engineers and will deal with matters of investigation and research. The solutions to problems there worked out will be applied and their benefits made available to the industry through the men handling gas appliances at the meter school at the State University."

J. A. Frates, vice president and general manager of the Oklahoma Union Railway Co. of Tulsa, was elected president of the association for the 1926-27 year, with Maj. J. H. Buell, vice president of the Oklahoma Power Co. of Tulsa as first vice president and L. W. Sherer, president of the Yale Telephone Co. of Yale, Okla., as second vice president. E. F. McKay of Oklahoma City, manager of the association, was re-elected, as also was W. R. Emerson, treasurer, of the Oklahoma Gas & Electric Co., Oklahoma City.

Four Tulsa men, R. C. Sharp of the Oklahoma Natural Gas Co., J. A. Frates of the Oklahoma Union Railway Co., J. H. Buell of the Oklahoma Power Co. and R. S. McBeth of the Oklahoma Natural Gas Co., are among the members of the association's executive board for the ensuing year.

URGES IRISH OIL MONOPOLY

Government control of gasoline and gasoline fuel substitutes has been put forward in a proposal by Senator Parkinson, of the Irish Free State, who urges the Government to delegate the control to one trust, which should receive the monopoly and should pay the Government a royalty on sales. The income received would be used for road upkeep.



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MEXICAN JOURNAL WARNS COUNTRY OF EFFECTS OF NEW OIL LAWS

By George Blardone

Mexican Bureau, The Oil and Gas Journal

TAMPICO, Mex., Mar. 20.—The following signed editorial from "El Mundo", of Tampico, Mexico, is of particular interest to American oil men—and in this connection the State Department at Washington might well consider it. The editorial, frank and concise, is signed by Enrique Mendoza Vizcaino. So frankly does he state the case of oil companies in Mexico that his article is reprinted here in full. His native exposition of the government's point of view is refreshing. He sums the companies' point of view with admirable candor and a keen appreciation of the situation.

El Mundo is one of the leading daily papers of Mexico. Vicente Villasana, its publisher and editor, is one of the few newspaper men in Mexico who is making a fight for the liberty of the press. He is president of the Mexican Press Association, a self made and virile man.

Mr. Mendoza Vizcaino's article follows:

(Translated from an article in "El Mundo" of March 10, 1925, by Enrique Mendoza Viscaino.)

March has arrived. The 15 days have passed and gone which the Minister of Industry announced to an American newspaperman as the time necessary to "imprison the wild beast" known as the Bylaws of the Petroleum Laws.

Meantime the notaries of tampico are on vacation, or writing poetry, because nothing, or practically nothing, in the line of work has come to them since the issuance of that law, and its twin, the Law of Alienship. And, when the notaries are idle, it is a fatal barometrical indication of bad times in the business world.

Expectation and anxiety, because of the lack of business operations, is the note of the day.

It is affirmed that the conference between the representatives of the oil companies and the Government have terminated in an atmosphere of harmony, cordiality and optimism, and that a part of the Bylaws have been mutually approved, composed of 180 articles, and that the other part will be concluded "muy pronto."

But the public asks: is it possible that the oil men and the Government have finally arrived at an agreement; that all are content, and that the new Bylaws will determine the beginning of a new area of prosperity for the petroleum industry?

Every indication points to the opposite. Let us see why.

The Bylaws referred to will not be limited simply to the application of the law itself and its penalties, as in the case of Bylaws of other laws, but they will, according to reiterated official declarations, even international ones, be as important, or more so, than the Petroleum Law itself; so ample, explicit and detailed that the rights and obligations of oil companies in the future will be solidly established, in due accordance with the necessities of the industry.

Very well and good; but it must be remembered that between this conceivement of the necessities of the oil companies, that is to say, the point of view of the companies on the one hand, and the viewpoint of the Government on the other hand, lies an abyss. The antithesis is as pronounced as between an affirmation and a negation.

The two points of view will now be set forth, with the warning that this will not be an exposition of any two theories, but rather a transcription, truthfully made of literal declarations, officially made by the Minister of Industry, and high officers of the oil companies, which declarations have from time to time been published in the columns of this paper.

The Government's Point of View

Mexico has an infinite wealth of oil. Of the 10,000 fields in which oil is known to exist, but one has been exploited. From this ten thousandth part alone, oil to the value of 2,000,000,000 of pesos has been taken, thereby proving that many millions more are yet to be obtained.

Frequent notices appear to the effect that production is rapidly diminishing, but such is not the case. Such information is given out and spread abroad by the companies for ulterior purposes.

The companies believe that by restricting their activities, thereby causing a drop in production, they will force the Government to change from its present nationalist legislation, a thing unheard of, and impossible.

For the same reason the companies refuse to open up new fields, held by them as reserves; they do not export all of their production, but store in tanks, pending that production has declined, explaining in that manner the shortage in exportation.

Each and every one of the oil companies operating has made, and still is making, tremendous profits; why therefore not impose new and further taxation on them, whereby they, in common with the rest of the national industries, shall contribute more amply to the national expenditure?

Seeing that they are here for the purpose of carrying off the wealth of Mexico is it not only just and right that the Bylaws shall place further encumbrances on them?

Companies' Point of View

A crisis has occurred to the petroleum industry. Production has dropped to approximately one half. In 1921 the production was 202,000.000 bbls., in 1922, 185,000,000; in 1923, 152,000,000; in 1924, 145,000,000, and in 1925, 115,000,000 bbls. Summing up these deficits, we find a total of 214,000,000 of barrels for the five years.

Every day efforts are unsuccessfully made to encounter more oil. Mecatepec, Teayo and Chichimantla in South Tuxpam; Tres Hermanos and La Agunda to the west of the "golden line;" Chinton, Tamismolon and Tanceme to the west of Panuco; Corcovado, La Culebra, La Tortuga and La Costa, near the Tamesi River; The Tamiahua Lagoon, Sarlaat and Macuspana on the Isthmus, are all places where many millions have been spent, and lost, in the search of oil; **and such a fact destroys the possibility that any farce is being enacted.**

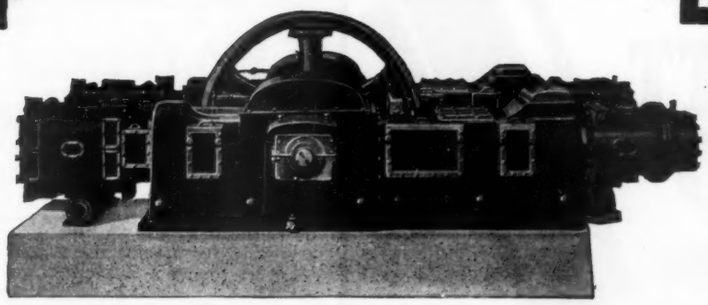
The finish of the "golden line", in the Tuxpam district caused enormous losses. Merely the installations made between Tamiahua and the Gulf involved a loss of 80.000,000 of pesos, without taking into consideration that represented by the abandoned pipe lines. Two or three of the more fortunate companies have escapted from bankruptcy, but the rest urgently need protection by law, they need to be stimulated and helped that they may carry on the struggle, but they cannot stand up under further burdens.

If such stimulation and help is not given, the definite collapse of this great industry will quickly be upon us.

Read again these two points of view, as diametrically opposed as the two poles of the earth, and the conviction is bound to come that the announced agreement arrived between the oil companies and the Government is at least difficult, if not impossible.

NEW ARKANSAS SURVEY

OKLAHOMA CITY, Okla., Mar. 20. A geological survey of the Coastal Plains area of Arkansas, said to cover about half of the State, is to be made soon under direction of Dr. George C. Branner, state geologist of Arkansas. The United States Geological Survey will assist, having promised to assign three men to the territory. No complete and detailed survey of the areas has been made and published. The work will require several months. Financial assistance has been offered by oil and lumber companies in the Plains area. In it are situated the El Dorado, Smackover and other pools.



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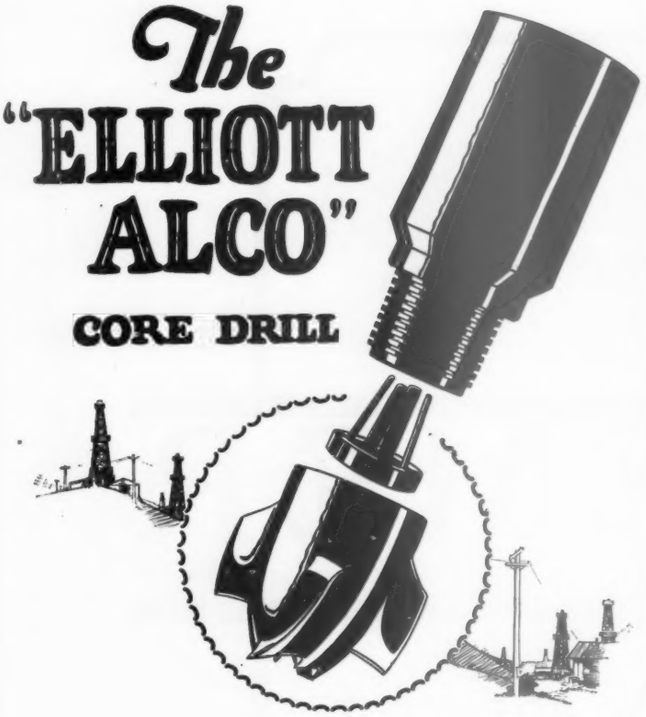

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EASTERN FIELDS

(Continued from Page 52)

ond test on the Willson Brothers farm good for 5 bbls. a day in the salt sand.

Lincoln County

In Carroll district, Lincoln County, the Cambridge Gas Co. completed in the Berea grit a second test on the J. D. Miller farm. It is a gasser. In the same district, the Laurel Development Co. got a gasser at No. 3 on the B. B. Jaynes farm.

In Glenville district, Gilmer County, the Pittsburgh & West Virginia Gas Co. completed a Maxon sand gasser at a test on the E. D. Fulton farm. In Carroll district, Lincoln County, C. C. Wolfe has a gasser in the Berea grit at a test on the Curtis Nida farm.

In Center district, Gilmer County, the Hope Natural Gas Co. completed a test on the C. M. Jones farm. It is a gasser in the Big Injun sand. In Booth Creek district, Taylor County, the Bridgeport Oil & Gas Co. has a fifth sand gasser at a second test on the J. C. Johnson farm.

Ritchie District

In Union district, Ritchie County, the Carnegie Natural Gas Co. has drilled a test on the Lee Matson heirs farm through the Gordon sand and dry and abandoned. In Simpson district, Harrison County, the Aizpurin Oil Co.'s test on the A. J. Lodge farm is through the fifth sand. It is dry and abandoned. Near Ellenboro, Clay district, Ritchie County, the Pittsburgh & West Virginia Gas Co.'s test on the William Zinn farm is a gasser in the Big Injun sand good for 4,000,000 feet.

On Gillespie Run, Grant district, Ritchie County, the South Penn Oil Co. has drilled No. 5 on the B. F. Potton-Ada Conaway farm through the gas sand good for 20 bbls. a day. In the same district, the Penn Royal Oil Co. is moving tools to its location on the Lowther Brothers farm.

In Jefferson district, Pleasants County, the Bailey Gas Co. has drilled through the Big Injun sand No. 5 on the H. S. and J. E. Ambler farm. It is dry in this formation, but will make a light pumper from the Maxon sand. In McClelland district, Doddridge County, the Hope Construction & Refining Co. has a gasser in the Gordon sand at a test on the Henry Yeater farm.

On Indian Creek, Clay district, Monongalia County, the Red Fox Oil & Gas Co. has drilled a second test on the M. E. Fetty farm through the Big Injun sand and found nothing. It will drill down and test the lower sands.

Wood County

In Walker district, Wood County, Jonas & Parks have now drilled their second test on the Ewings heirs farm through the Big Injun sand and dry in this formation. A light show of oil was developed in the Maxon sand. They will fill back to the Maxon and give it a test. A light pumper is the best hoped for. In the same district, the Coplin Farm Oil Co. has the rig completed for a second test on the J. W. Coplin farm. In the same district, the South Penn Oil Co. is drilling at 500 feet on the Susan Grant farm. In Union district, the same company has the rig completed for No. 4 on the Grant heirs farm. On Green Creek, Harper district, Roane County, the Big Injun Oil & Gas Co. has the rig completed for a test on the P. Painter farm.

On Poplar Fork, Scott district, Putnam County, 200 feet east of the first test on the A. B and Elizabeth Griffith farm, the Teays Production Co. has completed in the salt sand a second test and good for 12 bbls. a day. Located 120 feet south of this well the Charleston-Dunbar Gas Co. has the rig completed and started to drill a test on the Gabe Smith farm. Holders of leases in that section are drilling more wells than needed to take out the production.

In Walker district, Wood County, the Four S. Oil Co. has now shot its test on the John Lenhart farm, completed a few days ago, and increased its production to 10 bbls. a day. In Proctor district, Wetzel County, the Hope Construction & Refining Co. has the rig completed for a test on the Isaac Carney farm.

Starting Test Wells

In Central district, Doddridge County, L. H. Williams & Co. have started to drill a test on the C. Williams farm. In West Union district, the Hope Construction & Refining Co. is rigging up on the Kate McCauley farm. The same company has started to drill on the Lucinda Williams farm. In West Union district, the Columbia Carbon Co. is rigging up on the Lewis Maxwell farm. In Southwest district, L. R. Boyce & Co. have shut down at a second test on the John Broadwater farm. In Murphy district, Ritchie County, the Cain Run Oil & Gas Co. has the rig completed for another test on the M. Prunty farm.

Lincoln County Tests

In Jefferson district, Lincoln County, the Bear Branch Gas Co. has started to drill a test on the Spencer Hill farm. In Carroll district, the Sovereign Gas Co. has placed a drilling machine at a location on the Regina A. Thompson farm. The Columbia Gas & Electric Co. is drilling on the Daniel Bias farm. In the same district, the Transylvania Petroleum Co. is due in the sand at a second test on the L. R. Sweetland farm. In Duval district, the Grant Gas Co. is due in the Berea grit at a second test on the F. F. Nelson farm. In Union district, the United Fuel Gas Co. is drilling on the Scott Dingess farm. In Big Sandy district, Kanawha County, the same company has started to drill on the M. M. Henderson farm. The Oakland Development Co. is drilling on the J. A. Carter farm.

In Ten-Mile district, Harrison County, Worthy Marsh has started to drill on the F. M. Haney farm. In the same district, Burke & Lyons are due in the Big Injun sand on the W. T. Williams farm. In Union district, the Hope Natural Gas Co. has a rig up on the J. W. Somerville farm.

Doddridge County

In Central district, Doddridge County, Nay & Kintzner are hauling rig timbers to a location for a second test on the Radabangh-Fuccy farm. In the same district, the Hope Construction & Refining Co. is building the rigs to drill on the Catherine McCauley and Lucinda Williams farms. In West Union district, the Manufacturers Light & Heat Co. has shut down for orders at 2,750 feet at a test on the L. L. Shinn farm.

In Skin Creek district, Lewis County, the Hope Natural Gas Co. is building a rig on the Edgar Davis farm. In West Union district, Doddridge County, the Columbia Carbon Co. has started to drill No. 12 on the Lewis Maxwell farm. In Union district, Ritchie County, A. L. Britton's test on the Lawson Hall farm is a gasser in the Big Injun sand.

In Union district, Lincoln County, the Transylvania Petroleum Co. has started to drill a test on the J. J. Smith farm. In the same district, the Columbia Gas & Electric Co. has the road completed to a location on the Julia M. Egnor farm. In Carroll district, C. C. Wolf is due in the Berea grit on the Scott Lawson farm. In the same district, the Transylvania Petroleum Co. is due on the L. R. Sweetland farm and made a location on the E. M. Adkins farm.

Southwest Pennsylvania

The late gauges of the large producers in Morris Township, Greene County, show the rapid decline of the wells that came in a few weeks ago with a high initial production. The No. 1 Thomas Anderson is down to 70 bbls.; No. 3 on the T. F. Rutan, 78 bbls.; No. 1 James S. Rutan, 50 bbls., and No. 2 Louis Powers, 35 bbls.

In a few of the old districts there is a little test work starting. In Morris Township, Washington County, the Manufacturers Light & Heat Co. is due in the sand at a test on the David Craft farm. In McCandless Township, Allegheny County, Smith & Co. are due in the sand on the Bloom farm. In the same township, Nichols & Miller have a rig up on Aulston farm. In Marshall Township, Behm & Co. have a rig up on the G. E. Douthett farm. In the same district,

(Continued on Page 82)

Wheels that stay NEW

THE use of Moore Steel Bull, Band and Calf Wheels has expanded by leaps and bounds. For Several years, our shops were unable to keep up with the demand. Since the recent completion of a large new plant at Pittsburgh, our production and shipments have been more than doubled. To us these simple facts seem to be the best possible evidence of the universal satisfaction given by Moore Wheels in particular, and of the economy of steel versus wood wheels in general. For the heaviest service and longest life, there is nothing like a Moore Steel Wheel.

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Calf Wheels
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DALLAS, TEXAS
Magnolia Building

SHREVEPORT, LA.
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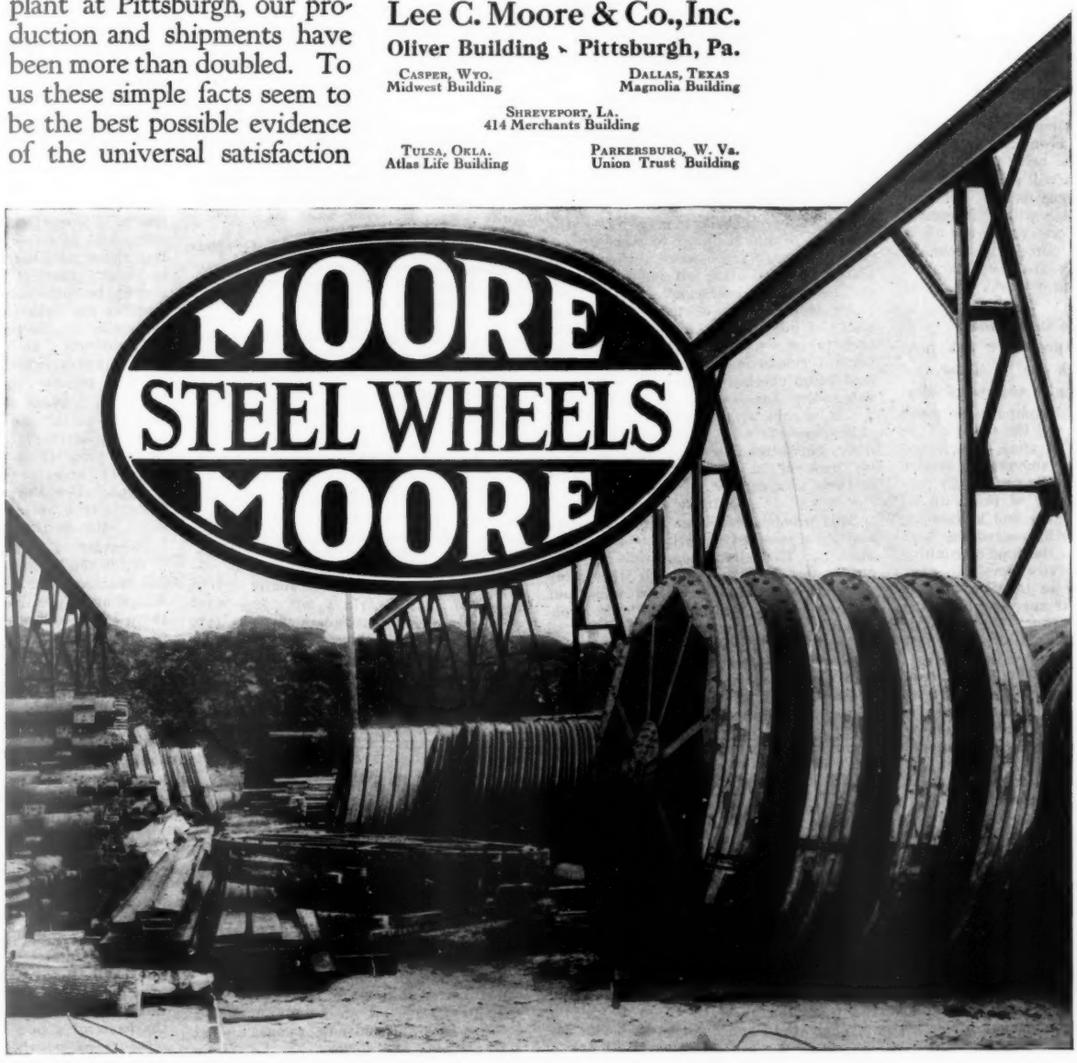
TULSA, OKLA.
Atlas Life Building

PARKERSBURG, W. Va.
Union Trust Building



Plan New Research on Lubricants

Bureau of Standards and Bureau of Mines Engaged in Extensive Experiments in Properties and Performance of Oils

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Mar. 22.—The Bureau of Standards and the Bureau of Mines are engaged in fundamental research respecting lubrication and have outlined additional projects relating to this subject.

The main research problem of the Bureau of Standards, as regards lubrication for the past seven years has been to secure correlation between laboratory tests and service performance of lubricants. Most of the work has been confined to lubricants for internal combustion engines, and transmissions with a small amount of work on turbine oils.

In addition to the research program the staff has been responsible for the routine testing of lubricants for purchase under Federal specifications, and more recently for furnishing such engineering service to Federal purchasing officers as the facilities and available staff have made possible.

Reports have been made upon work of this kind that has been completed, but the current subjects being investigated and in contemplation will not be reported upon until some future day.

The refining industry will be interested in these current projects which are all of especial interest to petroleum technologists and are here stated in this completed form for the first time. They are as follows:

Service Tests in Engines

A standard test procedure has been worked out in which the oil under test is subjected to a definite amount of service in an engine and comparisons made between the new oil and the oil after use for different lengths of time. As it has been found that the amount of service shown by various tests is practically proportional to the number of times an oil passes through the pump and lubricating system, it is possible by controlling both the amount of oil and the time of running to get comparable service time.

Oils are subjected to the following in addition to the usual specified tests (a) Measurement of dilution; (b) measurement and comparable analysis of ash with determination of metallic content; (c) vacuum distillation of oils; (d) carbon formation in engine cylinder with analysis of same (e) oxidation test of oils. Addition to or modification of these, of course, will be made as occasion requires.

Special attention is given to such measurements as can be made to determine wear, as piston ring weights, etc.

Measurements of engine friction at standard temperatures and speeds are included. In fact, the test procedure was worked out and practically standardized two years ago.

The present program as regards oils is as follows:

Four or five oils as nearly alike as possible but covering the extreme range of viscosities practicable in one engine.

Three or four oils differing in content of unsaturated compounds but otherwise similar. These to be of perhaps three viscosities.

Three sets of similar oils produced from three typical curves, probably Pennsylvania and California, the third being from a selected Mid-Continent crude. This selection should be given further consideration.

Two sets of oils differing in acidity, other qualities similar.

Behavior of diluted and "worn" oils in journal bearings.

A special journal friction machine has been built for the special purpose of determining rapidly the friction and rate of wear and typical journal bearings lubricated with different oils, and particularly to determine the maximum bearing loads which can be carried with these different oils. Use is made of the Hersey method, namely, the plotting of coefficients of friction against the quantity, viscosity times speed divided by unit load.

By this means conditions under which bearing failure will occur with a given oil can be determined within the limits of reproducibility of the bearings.

The list of lubricants to be used in this series of tests will depend upon the results of the engine tests mentioned above, and will include used oils from these tests.

Oxidation

At satisfactory laboratory test for stability of oils as regards oxidation has been perfected and this test is being used as mentioned above.

Viscosity at Low Temperature

Oils of different composition differ greatly in their resistance to flow at low temperature, and in a manner which is not at all predictable from the usual pour test. These differences may affect the cranking torque required to start an engine but affect much more seriously the ability of lubricating oil pumps to supply the engine bearings.

An investigation of the effective viscosity of oils under these conditions was undertaken some time ago and some important conclusions reached. These are now being checked on aircraft and other automotive engines. It is believed that a test should be devised along this line either to replace or supplement the pour test. The latter is of practically no value for instance in comparing oils differing in their wax content.

Oiliness

This problem has been much discussed and little conclusive work has been done upon it. The bureau some time ago laid out a tentative program for the study of what appeared to be the important features of this problem. Both the problem and the program are too complicated to explain briefly but enough has been accomplished to show that there are certain phases of lubrication such for instance as sliding friction of pistons and rings, where differences in "oiliness" may be of much greater importance than previously assumed. This work is progressing slowly as time permits.

Gear Lubrication

An investigation is being made of the wear and power loss in gear transmission systems as affected by quality of lubricant. The testing equipment for this work was built some time ago. The method, however, requires the use of test gears of equal hardness and other physical characteristics and considerable difficulty has been experienced in getting satisfactory gears.

The investigation also includes a study of the behavior of the same lubricants in sets of ball bearings.

Lubricants for this program have not yet been decided upon.

The mechanics of lubrication form another feature of the problems of the present and future that are receiving the attention of the Bureau of Standards. The most important of which follow:

Load Carrying Capacity of Journal Bearings

The general subjects of friction and oil and pressure distribution in journal bearings have been investigated both mathematically and experimentally. This work has been done, however, in most instances with regard to nearly perfect bearings, quite properly so in order to establish the general laws of lubrication.

In practice, however, it is more often the carrying capacity and life of a journal rather than the friction loss which is of importance and apparently the data available are not readily applied to the design of bearings for proper load carrying capacity, particularly when commercial bearings are considered.

The dimensional analysis due originally to Doctor Hersey has given a convenient means of correlating results and checking the limits of safe operation by plotting the function $\frac{ZN}{p}$ against power loss.

The factors of length-diameter ratio and clearance ratio can be brought into this analysis in such a way as to correlate results on all kinds of complete bearings.

In view of the above a research is recommended, to determine the limits of safe operation for bearings of commercial quality, probably accompanied by a further study of pressure distribution in both average and nearly perfect bearings.

The procedure proposed is to plot values of $\frac{2N}{p}$ vs. coefficient of friction for the required range of length-diameter, and clearance ratios in order to determine where the break in the $\frac{ZN}{p}$ curve comes for the various kinds of bearings.

It is believed that if this field is covered properly with care in the selection of bearings and journals it may permit of putting in tabular form practical information as to carrying capacities of bearings over the full range of speed, oil viscosities, size and shapes, which will almost entirely remove guesswork from the designing of bearings or the selection of lubricants whenever the conditions of load and temperature can be specified.

The Bureau of Standards has already done enough work on such a program to be assured of its value, and has laboratory equipment on hand for much of the program, including the further study of pressure distribution.

Work on Oiliness

The amount of work already done on the subject of oiliness is somewhat impressive. As yet, however, the results are very incomplete. Numerous lines of attack on this problem present themselves. The question seems not to have been considered as to whether oiliness plays an important part in general lubrication. It apparently has been shown that when complete film lubrication exists in a journal or a Kingsbury bearing oiliness is of minor, if any, importance. But these conditions are not continuous in most practical bearings and there should be information at hand as to whether the behavior of actual bearings in service is affected by this quality of the lubricant. It is still an open question, however, whether change of viscosity with pressure is important.

Wear in Service

Allied to this is the question whether wear in service is affected appreciably by any property of the oil other than its viscosity and the amount of abrasive present. The Bureau of Standards has under way a research which may throw some light on the subject.

Behavior of Reciprocating Bearings

While the behavior of oil films in journal bearings and thrust bearings of the Kingsbury type has been well studied there is no corresponding information as to the lubrication of sliding surfaces where the conditions are such as not to permit the formation of a tapered or wedge shaped film as in Kingsbury bearings. Examples of important cases of this sort are piston and crosshead also plain thrust bearings.

Under these conditions there seems to be as yet no definite line of attack mathematically and it appears that a careful study of the mechanics of such parallel lubricated surfaces, and of the behavior of oils in forming stable films under these conditions would throw considerable light on the subject of oiliness, as well as yielding information of much practical value.

At Low Temperatures

Another practical question in need of solution is that of the behavior of oils at low temperatures. It is customary to rate oils for use at low temperatures on the basis of a pour test which is only a measure of whether or not an oil can be poured out of a container at a given temperature. Owing to the fact that some oils are truly viscous and others plastic at low temperatures a test of this nature yields no information as to how an oil will behave under such pressure as exist in most lubricating systems. There is need of a much better means for rating

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OIL STOCK USED AS WALLPAPER TENDERLY REMOVED AS BOOM HITS

CHATHAM, Ont., Mar. 20.—An unusual reversal of an old familiar story of oil speculation comes from Calgary. It concerns "Billy" Stokes, who was one of the keenest speculators in the Calgary oil boom of 1914. Stokes is the owner of the Empire Hotel at Calgary and well known to horsemen throughout the Canadian West.

When the earlier Calgary boom collapsed Stokes found himself the possessor of a bale of nicely-engraved and gold sealed oil stock certificates. Many of them were left by oil men in lieu of hotel bills, and Stokes, thinking they were valueless, hit on the idea of papering two rooms in the hotel. The rooms were planned to be one of the show sights of the hotel.

The sudden rise of a new oil boom in the latter days of February led to a widespread demand for old oil stocks. Many of the boom companies have, of course, long since gone into liquidation, but a few are in good standing so far as corporate existence and lease holdings are concerned, and the stock of these rapidly jumped from zero to, in some cases, better than $1 a share.

The rush for oil stocks found Stokes locking both the souvenir rooms, and at last reports there were several gaps in the wall paper where stock certificates had been soaked off by the thrifty hotel keeper. One certificate was turned over for $1,000 cash, but Stokes is still holding on to a considerable expanse of wall paper which represents potential wealth.

"We called it the millionaire suite in fun," he stated, "and now it looks as if we might be right."

Fiery darts of motor heat are repulsed by the protecting shield of **CROWN OILS**

BY the standardized laboratory tests, you can of course check the distinctive excellence which identifies CROWN Motor Oils.

But the crucial test of performance in actual service—the way CROWN Oils hold their lubricating properties and protect cylinder walls and working parts against the destructive action of motor heat—affirms their true worth as superior motor lubricants.

CROWN Pales and Reds, of our own manufacture, range in viscosities from 100 at 100° with a pour test of below zero, to 2500 at 100° with a pour test slightly above zero. They have exceptionally low carbon content, good demulsibility and color.

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PETROLEUM CORPORATION
New York-Houston

WELL RECORDS IN CARSON AND HUTCHINSON COUNTIES, TEXAS PANHANDLE

(Compiled From Records of One Large Company Operating in the Field)

CARSON COUNTY

Company—	Well	Farm	Location—	Sec.	Blk.	Elev.	Lime	Pay	I. P.	T. D.	Completed	Remarks:
American Ref.	5(1D)	Burnett	400 ft. each way from SE cor. SW¼	115	5	.....	1,870	3,032-3,035	210	3,038		Oil flow.
American Ref.	1-E	Burnett	330 ft. each way from SW cor. SE¼	129	5	3,130	2,011	3,120-3,128	10	3,135		Dry and abandoned.
Magnolia Pet.	1	Burnett	330 ft. each way from SE cor. NE¼	115	5	3,129	.....	2,120-2,470				Abandoned as gas.
								2,955-2,961	12M	2,985		
Premier Oil Corp.	1	Burnett	330 ft. each way from NW cor. SE¼	76	4	3,209	1,980	.....	...	2,675		Temporarily abandoned.
W. W. Silk	5	Burnett	350 ft. each way from SE cor. NW¼	114	5	.....	.....	.....	...	.....		Location abandoned.
W. W. Silk et al	3	Burnett		115	5	3,150	2,047	.....	...	2,530		Gas sand 2,356.
W. W. Silk et al	2	Burnett	660 ft. S and E of NW cor.	93	5	3,133	1,995	3,150-3,158	8	3,158	8-10-23	40M gas and 8 bbls. oil; little water in top sand.
W. W. Silk et al	1	Burnett	300 ft. from N line, 500 ft. from E line NW¼	93	5	3,142	1,980	3,070-3,076	146	3,076	9- 7-22	Total 25M gas; gas sands 2,527-40; 2,540-2,610; 2,610-75; sand show oil 2,785-96; sandy lime 2,945-66; and 2,993-98 show oil; oil sand 3,070-76.
American Ref.	1-A	Burnett		115	5	3,080	1,804	2,930-2,985	230	.....	8-15-24	
American Ref.	2	Burnett		115	5	3,048	1,835	2,920-2,928	81	.....	12- 2-24	
American Ref.	3(1-B)	Burnett		113	5	2,978	.....	2,841-2,843	84	2,929		
J. E. Crosbie	1	Burnett		114	5	3,020	1,800	2,876-2,900	400	2,937	3-11-25	
J. E. Crosbie	2	Burnett		114	5	.....	1,789	2,970-2,976	190	.....	7- 7-25	
Gates Oil	1	Burnett		107	5	3,140	1,915	3,013-3,020	125	3,059	Jan., '25	
Gulf Prod.	2	Burnett	2,575 ft. S and 1,900 ft. E of N cor.	106	5	3,119	1,925	3,040-3,048	190	3,048	5- 2-21	Show oil 2,970-75; 100 ft. salt water at total depth.
Gulf Prod.	3	Burnett	330 ft. each way from SW cor.	116	5	3,192	1,995	3,120-3,140	90	3,142	3-30-24	
Gulf Prod.	4	Burnett	430 ft. each way from NW cor.	107	5	3,038	1,835	2,950-2,960	80	2,967	11-14-24	
Gulf Prod.	5	Burnett	430 ft. each way from SE cor.	106	5	3,146	1,976	3,067-3,079	235	3,079	2-11-25	
Gulf Prod.	6	Burnett	360 ft. S and 332 ft. E of NE cor.	106	5	3,108	1,902	3,064-3,079	45	3,081	Feb., '25	P. B. to 2,981.
Gulf Prod.	7	Burnett	2,558 ft. W and 300 ft. N of SE cor.	106	5	.....	1,865	2,988-2,992	330	2,992	6-29-25	20M gas, total, from sands 2,455 to 2,730.
Gulf Prod.	8	Burnett	330 ft. each way from NW cor. NE	107	5	3,018	1,802	2,864-2,874	750	2,884	6- 3-25	
Gulf Prod.	9	Burnett		107	5	3,048	1,805	.....	...	2,995		
Marland	1	Burnett		107	5	3,163	1,980	3,063-3,080	854	3,080	4- 2-25	
Marland	2	Burnett	450 ft. from W line, 470 ft. from N line SW¼	107	5	3,102	1,895	3,022-3,042	8	3,052	8-15-25	
Marland	3	Burnett	450 ft. E, 1,475 ft. S of NW cor. SW	107	5	3,144	1,940	3,025-3,078	370	3,078	8-20-25	1,500 ft. OIH in sandy lime and granite wash 2,977-92.
Marland	4	Burnett	450 ft. N and 430 ft. W of SE cor. SW	107	5	3,127	1,918	2,985-3,057	...	3,057	10-28-25	
Skelly Oil	1	Burnett		92	5	3,178	1,980	3,086-3,097	237	3,097	11- 7-24	
Skelly Oil	2	Burnett		92	5	3,070	1,902	2,936-3,992	400	2,990	2-25-25	
The Texas Co.	1	Burnett	1,150 ft. from S line, 375 ft. from W line SW¼	114	5	3,094	1,925	3,004-3,018			11-20-22	Flowed for year and deepened.
The Texas Co.	2	Burnett	286 ft. S along survey lines and 599 ft. E of NW cor.	92	5	3,173	1,993	3,060-0,064 3,020-3,044	175 200	3,065 3,128	11- 4-24	20M gas at 2,868; 11M 2,320-50; 10M 2,390-2,425; 11M 2,712-25.
The Texas Co.	3	Burnett	2,702 ft. N and 325 ft. E of SW cor.	108	5	3,115	1,870	3,040-3,042	300	3,045	6-13-24	40M gas bradenheaded.
The Texas Co.	4	Burnett	450 ft. N and 330 ft. E of SW cor.								10-27-24	P. B. to 2,995; 10-bbl. show 2,915-17 lime; 25 bbls. in granite wash 2,951-57, and 2,963-65; water 3,008.
				114	5	3,052	1,865	2,963-2,965	25	3,008		
The Texas Co.	5	Burnett	440 ft. from S and E lines SW¼	114	5	2,993	1,770	2,949-2,951	203	2,902	4- 2-25	
The Texas Co.	6	Burnett	330 ft. each way from NW cor. SW								10-23-25	Total gas 77M; show gas 2,410-25; 33M 2,805-45; 16M 2,905-15; 25M 2,961-70; 4 bbls. oil in granite wash 3,014-16.
				114	5	3,108	1,965	3,042-3,044	400	3,044		
The Texas Co.	2	Burnett	330 ft. each way from SW cor.	113	5	3,052	1,835	2,904-2,962	90	2,725	4-19-25	
The Texas Co.	3	Burnett	330 ft. each way from NW cor. SW	113	5	.....	.....	2,906-2,911	50	.....		
W. W. Silk et al	3-A	Burnett	995 ft. from N line, 325 ft. from E line	115	5	3,133	1,960	3,039-3,043	50	3,108	12-17-24	
W. W. Silk et al	4	Burnett	400 ft. from S line, 400 ft. from E line	93	5	3,141	1,790	2,635-2,800	20M	3,180	10- 7-25	Gas well; red granite 2,800-3,180.
The Texas Co.	1	Burnett	350 ft. from N and W lines	90	5	3,110	1,710	2,965	109M	2,965	11- 7-23	Gas well; hit granite 2,956.
Humble	1	Burnett	2,640 ft. N and 1,320 ft. E of SW cor.	75	5	3,354	.....	.....	60M	2,882	7- 8-21	Gas well; show gas 2,065-2,100 and 2,100-80; ½M 2,185-2,335; 4M 2,335-80; 9M 2,390-93; 11M 2,393-2,435; 40M 2,435-80; 15M 2,670-2,700; top granite wash 2,780.
The Texas Co.	1	Tipton et al		201	3	3,289	2,000	.....	...	3,115		
Gulf	1	Winn		97	7	3,377	2,695	.....	...	3,775		
Gulf	1	Burnett	330 ft. each way from NW cor.	91	5	3,087	1,790	2,430-2,435	50M	3,502		Gas well; hit granite 3,485; oil show 3,150; granite wash 3,160, and 3,400-47; P. B. to 2,827.
Gulf	1	Burnett	2,970 ft. from N line, 990 ft. from W line	118	5	3,327	1,947	2,884-2,942	100M	3,225	6- 7-22	P. B. to 2,760; salt water 3,200-25; first completed 8-4-20 as 50M gas.
American Ref.	4	Burnett		112	5	3,019	.....	.....	...	3,410		
Humble	3	Burnett	1,320 ft. from N and W lines	38	5	3,420	1,953	2,436-2,450	27M	2,975	7-27-22	Lime ½M gas 2,210-35; 1M 2,330-50; broke lime 4M 2,360-70; lime 7M 2,390-2,405; lime 9M 2,415-20; blue lime 18M 2,436-50; junked and abd.
Humble	1	Burnett		37	5	3,302	.....	.....	...	1,985		
Magnolia	1			115	5	3,129	1,920	.....	...	2,985		
Danciger Oil				129	5	3,097	1,992	.....	...	3,128		
Culbertson Bros.	1	Armstrong	(T&TRR survey)	30	2	3,390	2,450	.....	...	3,560		
Culbertson Bros.	1	Burnett		20	5	3,267	.....	.....	...	2,177		
Capitol Oil	1	Purvine	(BS&F survey)	11	T	3,563	2,760	.....	...	3,010		
Humphreys	1	Sanford	(AB&M survey)	11	3	3,169	1,841	.....	...	2,520		
Premier Oil et al	1		NW cor. SE¼	76	4	3,209	1,970	2,308-2,637	30M	2,680		Gas from 2,308 to 2,637.

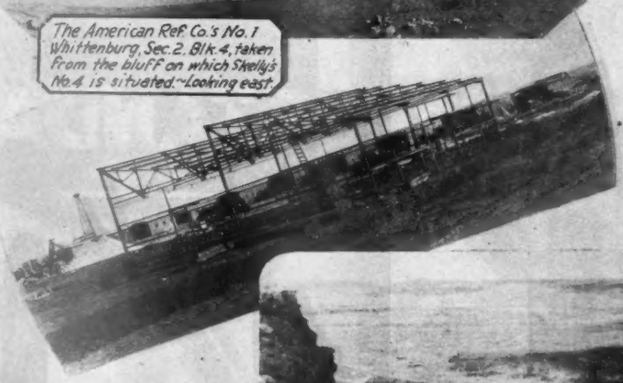
HUTCHINSON COUNTY

Company—	Well	Farm	Location—	Sec.	Blk.	Elev.	Lime	Pay	I. P.	T. D.	Completed	Remarks:
Canadian River	1	Kingsland	330 ft. each way from SW cor. N 24 acres SW SW	4	Y	2,976	2,035	2,767-2,838	500	2,938	2-15-26	14M gas, 200-qt. shot 2,862-2,938.
Centerfield Oil	1	Smith	990 ft. from N and 330 ft. from W of SW¼	10	Y	.....	2,035	2,858-2,903	30	2,915	2- 4-26	Pump 40 bbls.
Crosby & Lock	1	Pitts	330 ft. each way from SW cor.	7	M-21	2,913	2,150	2,877-2,808	10	2,916	11-19-25	Skidded and abandoned.
Dixon Creek	2-A	Smith	330 ft. N and 595 ft. E SW cor. NW¼	11	Y	3,000	2,095	2,843-2,867	550	2,867		Not drilled in.
Douglas Oil Co.	2	Whittenburg	1,122 ft. E of Douglas No. 1 J. A. Whittenburg (H&TC)	20	47	3,086	2,260	3,005-3,065	100	3,065		
Gibson Oil Corp.	1	Whittenburg	620 ft. E and 860 ft. N of SW cor. N½	62	46	2,966	2,170	2,925-2,930	242	2,935	1-21-25	
Gates Oil Co.	1	Kingsland	580 ft. N and 330 ft. E of SW cor.	4	Y	3,086	.....	.....	...	2,150		Skidded and abandoned.
Gulf Prod. Co.	1	Whittenburg	178 ft. S and 255 ft. E of SE cor. (in Mary Whitley survey)	63	46	2,975	2,150	2,921-2,929	300	2,943	Feb., '26	Shot pay at 2,769-2,841, made 100 bbls. 10-3-25.
Herring-McIlroy	1	Smith	330 ft. N and 660 ft. E of SW cor. SE¼	5	Y	2,877	1,980	2,785-2,858	60	1,858	11- 2-25	
McIlroy Bros.	2	Smith	330 ft. each way from NW cor. SW¼ SE¼	5	Y	2,898	2,005	2,764-2,771	125	2,882	2-11-26	210-qt. shot 2,815-85.
McKinney-Bayer	1	Weatherly	330 ft. each way from NW cor. NE NE	17	Y	3,092	2,125	2,961-2,968	20	3,084		
Native Oil Co.	1	Johnson	SE cor. N½ Tract 4 Mary Whitley survey			2,993	2,180	2,949-2,969	160	2,969	2- 4-26	Shot.
Panhandle Ref.	3	Dial (Perkins)	320 ft. S of center N line (H&GN survey)	1	1	3,029	2,172	2,948-2,995	330	2,997		700 bbls. after shot.
Pulaski Oil(Phillips)	1	Smith	NW cor. SE SE	5	Y	3,021	.....	2,930-2,980	450	2,980		
Roxana Pet. Co.	1	Smith	213 ft. N and 300 ft. W of SE cor. SE NW	14	Y	3,001	2,075	2,880-2,888 2,957-2,960	195	2,960		
Travelers Oil	1	Kingsland	495 ft. N and 617 ft. W of SE cor. SW NE	6	Y	2,975	2,050	2,877-2,882	115	2,895		
Barnum	1	Johnson	2,240 ft. from N line, 300 ft. from W line	37	Y	3,111	1,906	2,026-3,030	50	3,100	4- 2-25	Had about 65M gas 2,881.
New Domain	1	Borton		33	Y	3,203	2,070	3,085-3,090	105	3,090	7-16-25	110M dry gas; 5M 2,285-2,305; 15M 2,320-75; 15M 2,375-2,420; 10M 2,575-90; 15M 2,610-20.
Middleton	1	Weatherly	330 ft. E and 330 ft. S of NW cor. SW SW	18	Y	3,143	2,125	3,115-3,126	314	3,126	8-20-25	5M gas 2,795-2,800; oil in granite wash.
J. R. Phillips	1	Kingsland	510 ft. S of N line and 600 ft. E of W line of SE	6	Y	2,888	1,950	2,830-2,850	280	2,850	9-15-25	2M gas 400 lbs. 2,590-2,620; oil, 15 bbls. 2,740-70; 80 bbls. 2,798-2,820; 250 bbls. and 10 bbls. water 2,830-50.
J. R. Phillips	2	Kingsland	890 ft. from N line and 550 ft. from E line NE SE	6	Y	2,936	1,987	2,780-2,905	632	2,905	11- 1-25	2M gas 2,575-2,660; oil show 2,765-80. Not completed.
Souligny	1	Johnson	(Mrs. E. Tomlinson survey)	1	1	.....	1,357	2,665-2,684	20M	.....		
Western Enterprise	1	Smith	460 ft. N and 375 ft. W of SE cor. NW	9	Y	2,910	1,850	2,765-2,860	100	3,105	Jan., '25	Salt water 3,105; P. B. and shot 330 qts. 2,765-2,860; 3M gas 2,536-41.
McGee & Co.	1	Smith-Capes	C SE¼	10	Y	2,907	1,970	2,760-2,847	80	3,175	11- 4-24	Shot 255 qts. 2,770-2,820; 180 qts. 2,760-2,847; 3M gas 2,610-25.
South Hutchinson	1	Whittenburg	300 ft. each way from SW cor. NW	12	Y	3,008	2,105	2,960-2,965	...	2,965	9-26-25	Rotary to 3,200.
Panhandle	1	Perkins	1,000 ft. each way from NW cor. S 320 acres	90	Z	3,066	2,235	.....	...	3,060		Rotary to 2,592; cable to bottom; 1,300 ft. OIH 3,041-44.
Panhandle	2	Perkins	1,000 ft. N of CSL of N 320 acres	23	47	3,058	2,230	2,980-3,045	65	3,047	9-26-25	Oil sand 2,924-32.
Prairie O. & G.	1	Weatherly	1,265 ft. N and 330 ft. W of SE cor.	23	Y	3,162	2,127	3,112-3,122	110	3,123	11- 4-24	
Dixon Creek Oil	1	Smith		14	Y	3,079	2,142	2,947-2,960	300	2,960	3-19-25	
Twin Six Oil	1	Kingsland	300 ft. from N and E lines	6	Y	2,069	2,170	2,965-2,975	100	2,987	6-15-24	
Wilson et al	1	Whittenburg	1,265 ft. N and 1,360 ft. E of SW cor.	73	46	2,995	.....	2,906-2,913	255	2,919	4- 9-25	25M gas 2,325; 65M 2,700.
Douglas Oil	1	Whittenburg		21	47	3,073	2,250	2,987-3,062	52	3,062	2-25-25	
Gulf	2	Dial (Perkins)	500 ft. N of CSL	2	1	2,927	2,115	2,856-2,862	185	2,896	6-24-25	Show heavy oil 2,765; 1 bbl. hr. 2,800-10; 200 ft. OIH 2,810-40; sandy lime 2,856-62.
Gulf	1-D	Whittenburg	NE cor.	2	XO2	3,082	2,242	3,060-3,065	15	3,090	6-10-22	
Plains	1	Weatherly	1,140 ft. from S line and 1,620 ft. from W line	17	Y	3,134	2,176	3,060-3,092	21	3,270	7-11-23	4M gas 2,628; 1,000 ft. OIH 3,218-21; shot 150 qts., av. 75 bbls. afterward.
Gulf	1	Dial (Perkins)	(GS&S sur.) 300 ft. from S and W lines NW	90	Z	3,112	2,310	3,060-3,065	65	3,735	9-26-22	P. B. to 3,100; pump test 135 bbls.; 5 bbls. sand 3,082-86.
Heywood Synd.	1	Coble	(TC survey)	15	M-25	2,875	3,208	.....	...	4,001	3- 1-23	Show gas 3,209-21; dry and abandoned.
Amarillo Oil	2-B	Lee Bivins	(H&TC)	90	B-46	3,061	1,715	3,137	140M	3,137	8- 6-25	Gasser.
Prod. & Ref. Corp.	1	Bivins	330 ft. N and E of SW cor. NE	11	Y-2	3,208	1,900	.....	76M	2,655	3-18-24	Gas 1,960-65; 2,322-25; 2,335-40 (15M); 2,425-35; 2,465-2,500 (40M); 2,515-25; 2,607-22; 2,642.
Humphreys	1	Johnson	(T&T survey) 1,320 ft. W of center	4	Y-2	3,174	1,845	2,542	...	2,542	9-23-24	Gasser.
J. O. Whittington	1	Sanford	(H&TC survey) SW NE SE	82	46	3,130	1,898	3,076-3,118	300	3,240	3-23-24	Pump 100; P. B. to 3,120.
Gulf Prod.	1	Cockrell	(D&SE survey) 330 ft. from N and W lines	10	B-3	3,096	2,190	.....	...	3,503	12-10-24	Dry and abandoned; 20-bbl. show at 3,015-30.
Prairie O. & G.	1	Diana Shaw	2,310 ft. from S line and 330 ft. from W line (A&B survey)	27	Y	3,163	1,938	.....	39M	3,560	5-15-25	P. B. to 2,942; gas sands 2,330-2,725; 2,735-40; 2,815-2,905; 2,912-85; 3,027-30; 3,078 (3M); 3,146 (1M); show oil in granite wash 3,110.
Watchorn O. & G.	1	Coble	(H&TC survey) 300 ft. S and W of NE cor.								6- 4-24	Dry and abandoned.
Texo (Whittaker-Newbold)	1		S 80 acres of N 226 acres	10	47	2,748	2,330	.....	...	3,505		
	1	Johnson	(Mrs. E. Tomlinson survey)	1	XO3	3,167	.....	.....	...	1,200		
	1	Drysdale		17	Y	.....	.....	.....	...	2,650		
Crosbie	1	Whittenburg		12	Y	.....	.....	.....	...	2,540		

Texas Panhandle Scenery

The American Ref. Co.'s No. 1 Whittenburg, Sec. 2, Blk. 4, taken from the bluff on which Skelly's No. 4 is situated.—Looking east.

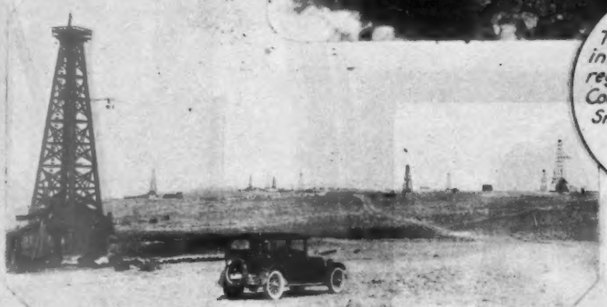
An innocent looking rig but its gas has a real kick.— Men have to wear gas masks to work around it.— Prairie Oil and Gas Co.'s No. 1 Johnson, Sec. 22, Blk. Y.



Above: Phillips Petroleum Co.'s new gasoline plant in Tract 7, Mary Whitley Survey, under construction.

Right: Looking north across Dixon Creek toward "Peatop Dome" White Eagle No. 2, Sec. 11, Blk. Y, in foreground. →→

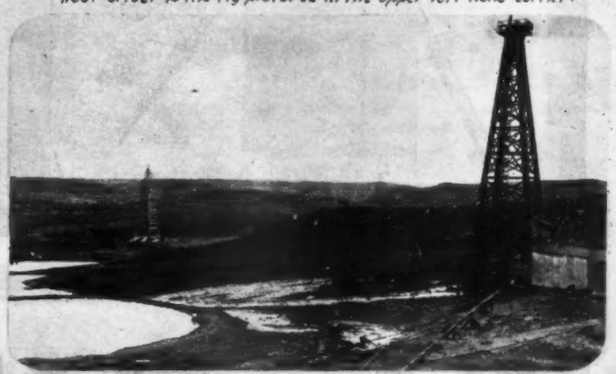
Typical terrain in the productive region of Hutchinson County. — Holmes' No. 1 Smith, Sec. 12, Blk. Y, in the foreground



The most actively developing district in the Panhandle. — On the left is the Native Oil Co.'s No. 1 Johnson in Sec. 4 of the Mary Whitley Survey, Hutchinson County. The black rig just to the right of center is Gulf Prod Co.'s No. 1 Whittenburg in Sec. 1, and the fifth rig from the left is Gibson Oil Co.'s No. 1 (now Phillips Pet.) in Sec. 62, Blk. 46

This lonely rig may look pretty wild but it's inside the "proven" territory, so-called. It is Skelly Oil Co.'s No. 4 in Sec. 22, west offset to the rig pictured in the upper left-hand corner.

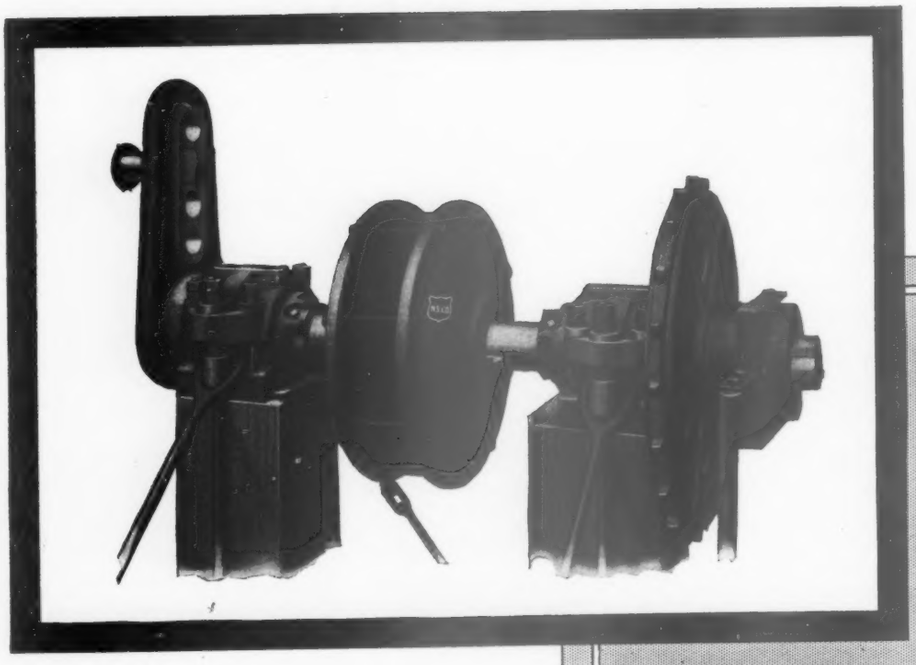
Quite a different scene from the flat prairie district around Amarillo and Panhandle. — Looking north across Dixon Creek.

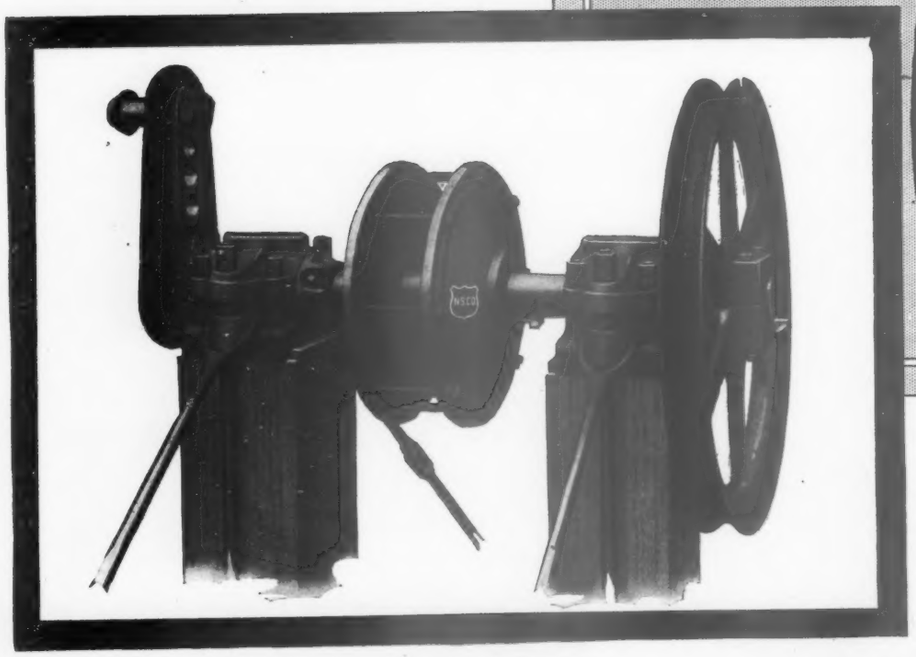


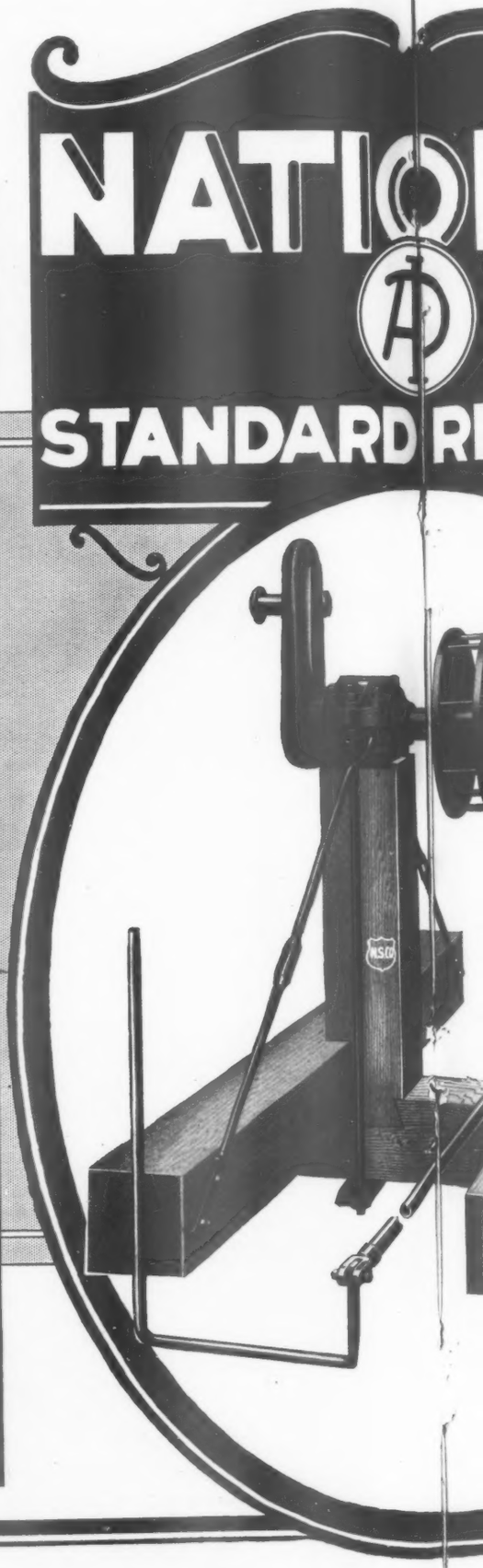
This looks like the best well in the field so far. It is the Dixon Creek Oil Co.'s No. 2 Smith in Sec. 11, Blk. Y, and was flowing about 800 bbls. daily, natural, into earthen storage on the left.

All photos by staff correspondent

C.D.L.







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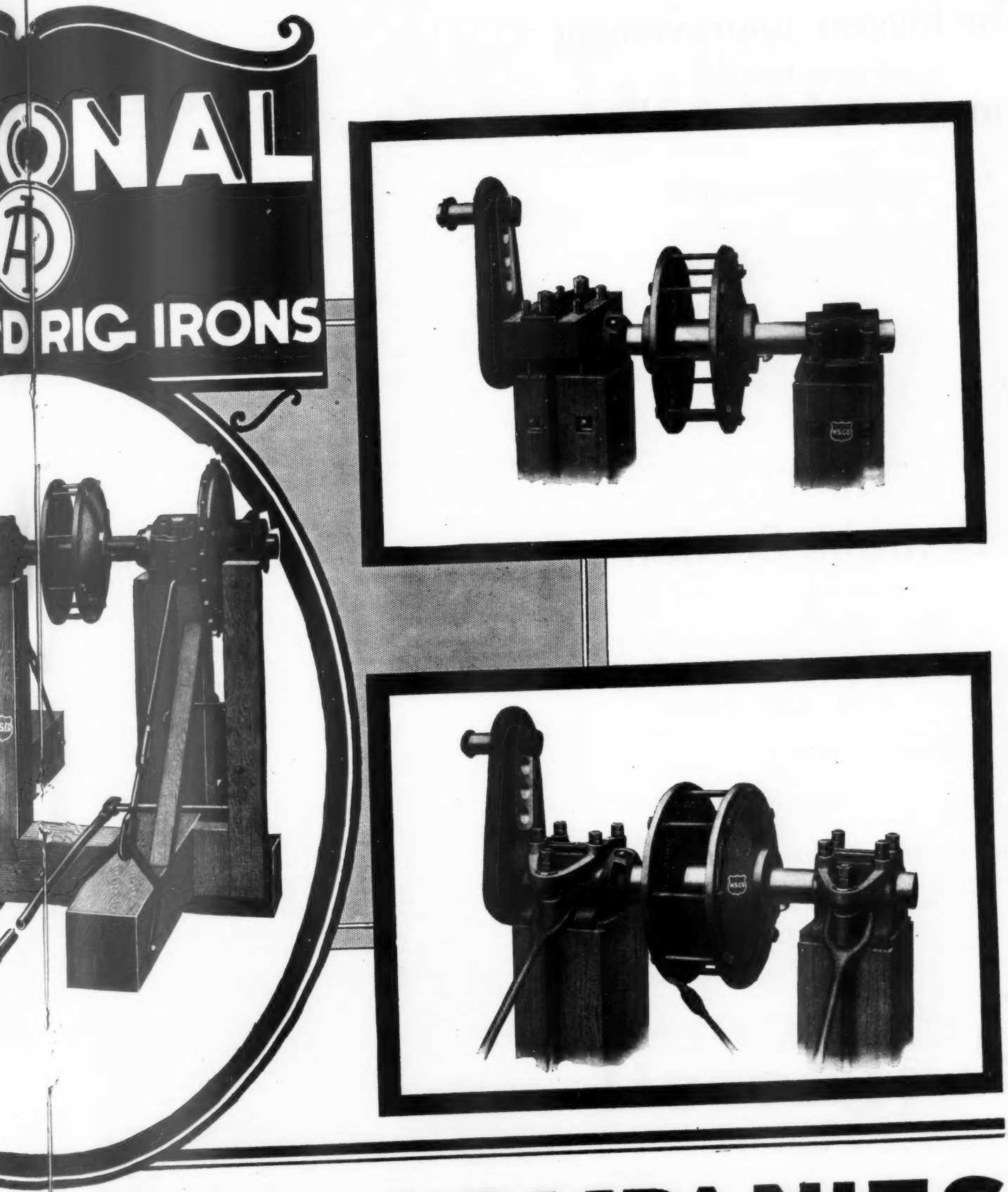

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EASTERN FIELDS

(Continued from Page 74)

Pikerton & Co. have a rig up on the C. Huggins farm. Dunlap & Co. are due in the sand on the William Deem farm.

In Morris Township, Greene County, Sutton & Mong have drilled a test on the C. S. Day farm through all sands and dry. In the same township Leonard & Co. are hauling rig timbers to a location on the William Tripp farm.

In Springhill Township, T. J. Hamilton and others completed a test on the Elizabeth B. Rice farm. It is a gasser in the Big Injun sand good for 280,000 feet. In the same district, the Peoples Natural Gas Co. is drilling a test on the Patrick Taylor farm. In Aleppo Township, Covert Brothers and others are drilling a test on the Bert Loar farm. In Morris Township, Hawkins heirs are drilling a test on No. 2 Hawkins lease.

Two miles south of Schellberg, Bedford County, Pennsylvania, C. R. Hillard and others are drilling a wildcat at a depth of 3,904 feet. At the depth named several good showings of oil were developed at various depths. They are still drilling and expect better results in a lower formation.

Five miles south of Randolph, N. Y., the Arkansas Fuel Oil Co. is down 4,500 feet at a deep test. It will drill 200 feet deeper and unless oil or gas is developed in the White Medina sand will abandon it.

KENTUCKY-TENNESSEE

(Continued from Page 52)

hole. The wells were distributed by counties as follows:

County	Comp.	Wells	Prod.	Dry	Gas
Barren	6	5	67	1	0
Warren	5	2	7	3	0
Estill	2	2	7	0	0
Johnson-Mag'n	2	2	8	0	0
Allen	2	0	0	2	0
Law'ce-John'n	1	1	7	0	0
Simpson	1	1	10	0	0
Total	19	13	106	6	0
Last week	16	9	69	7	0
Difference	3	4	37	1	0

During the month of February 361,887.20 bbls. of crude oil were accounted for in Kentucky, carried from the producing leases by the major pipe lines making reports. The eastern division led with a total run of 255,893.72 bbls., which was handled through the lines of the Cumberland Pipe Line Co. in the central and eastern portion of the state, and these runs were made by weeks as follows: Week ending February 6, 64,764.83 bbls.; week ending February 13, 58,343.59 bbls.; week ending February 20,70,799.94 bbls.; week ending February 27, 61,985.36 bbls.

Pipe line runs during the month of February in the western division amounted to 105,983.48 bbls., a loss of 1,848.39 bbls., when compared with January figures. In this division the Indian Pipe Line Corp. is handling the output of Warren, Allen, Simpson and the Owensboro districts; the Paragon Development Co. handles crude from Barren, Clinton, Cumberland and Monroe Counties, while individuals handle the product of Hopkins and Logan counties. These runs were distributed by counties as follows:

	Runs	Inc.	Decrease
Warren	34,894.82	424.22	2,528.37
Barren	21,769.39	.....	100.40
Owensboro	22,852.32	.....	581.76
Allen	19,058.16	.....	581.76
Cumb'd-Mon'e	5,444.00	816.42	.....
Clinton	355.03	.....	198.29
Simpson	442.42	260.65	.....
Hopkins	1,101.68	59.04	.....
Logan	65.66	.10	.....
Total Feb.	105,983.48	1,560.43	3,408.82
Total Jan.	107,831.87		
Difference	1,848.39		

Western Division

Road conditions are not what they should be for active development in the Owensboro district of Hancock, Ohio, and Davies Counties, and the week shows no completions although several wells are due for completions in and around the good wells in the Guenther-Gant area as well as near Pellville and in the Midkiff Pool.

Barren County

The outstanding features of the western division are the new finds being made both to the south and east of Glasgow, in Barren County. The oil industry in this county received a renewed impetus when the Esslinger Oil Co., which has operated in the county for some time, brought in a flowing well three miles east of Glasgow. The well is effort No. 1 on the C. B. Jones lease in what is known as the Lecta Pool, and began flowing when the drill passed through the shale at 410 feet. The well flowed a 100-bbl. tank during the night and was shut in on account of a shortage of storage. It is reported a 50-bbl. well. The well is all the more important owing to the fact that it is purely a "wildcat" test being the first producer ever drilled in that section and besides opening a new pool, offers large possibilities for operators. Mr. Esslinger has been operating in Barren County and has shown his faith in that section by drilling several wells.

Another well of no less importance is the one drilled by Wooten and associates four miles southeast of Glasgow, another "wildcatter" that has established a new territory. The first pay showed at 80 feet, and the well looked good for a small pumper, but not satisfied, the owners drilled to the second pay at 220 feet and will give it a shot. This makes three new pools added to Barren County since the starting of the current year, the first being Kinnard and others, four miles south of Glasgow on the South Jackson Highway. These three new pools are in for a heavy drilling campaign with hopes of extending the producing area down into both Monroe and Allen Counties.

Out the Tompkinsville road from Glasgow, Baker and others' test on the Matthis lease, is reported at 3 bbls., with No. 2 drilling.

In the Coral Hill Pool, Baird and others' second well on the Morgan lease, is estimated at 3 bbls. on the pump.

Lew J. Emery Jr. & Sons Co. drilled in what is reported a 5-bbl. pumper in No. 23 on the Depp-Greer lease, in the Gorby Pool. This company's No. 1 Smith lease, adjoining the Richarson lease in the same pool, is a duster.

Much new work is springing up in the Lecta Pool since the Jones well came in a good one. Ziegler Brothers are working at No. 1 Pediogo lease. The Wood Oil Co. is drilling No. 1 Keaton; Gillespie & Wiggins started No. 1 Spencer; Esslinger Oil Co. is drilling No. 2 C. B. Jones, and also No. 1 on the Morton.

In the Gorby Pool in the Haywood district, southwest of Glasgow, the Richardson Farm Oil Co. is drilling Nos. 4 and 5 Richardson lease. J. W. Porter's No. 1 Chamberlain is reported at 25 feet below the black shale. Jacob Best and others are down around 150 feet at No. 5 Sanders. Hiland Oil & Gas Co. is about the same depth at No. 14 Cassaday, as is T. L. Gorby and others' No. 3 Walter Bales lease. Wood Oil Co's. No. 1 Whitney lease, is in the sand but the value of the well is not yet known. T. L. Gorby and others' No. 1 Ellis, is reported drilling in the black shale, just above the producing sand.

In the Hall-Baker Pool, the Consolidated Gas Co., is nearing the pay sand at No. 15 H. W. Duff lease.

In the Emory-Moore Pool, Ziegler Brothers Nos. 13 and 14 Drinon lease, are both something like 160 feet below the black shale and still drilling. T. L. Gorby and others are reported drilling in black shale at No. 2 W. E. Steffey lease. Houchins Leasehold is down close to 375 feet in No. 5 Mayfield lease.

Warren County

Two small producers and the same number of dusters were the result of the drill in the Bowling Green Field of Warren County. In the Davenport Pool, T. A. Sheridan's No. 4 on G. Davenport No. 3 lease, is reported dry at 1,255 feet. The New Domain Oil & Gas Co's. No. 4 Besse Snell Clark lease, is also a duster at 1,300 feet.

Lincoln Oil Producing Co's No. 3 E. and G. Davidson lease, is estimated at 5 bbls. at 1,300 feet, while No. 4 is a duster at 1,315 feet.

Onsel-Hanrahan Oil Co's No. 9 J. C.

(Continued on Page 86)

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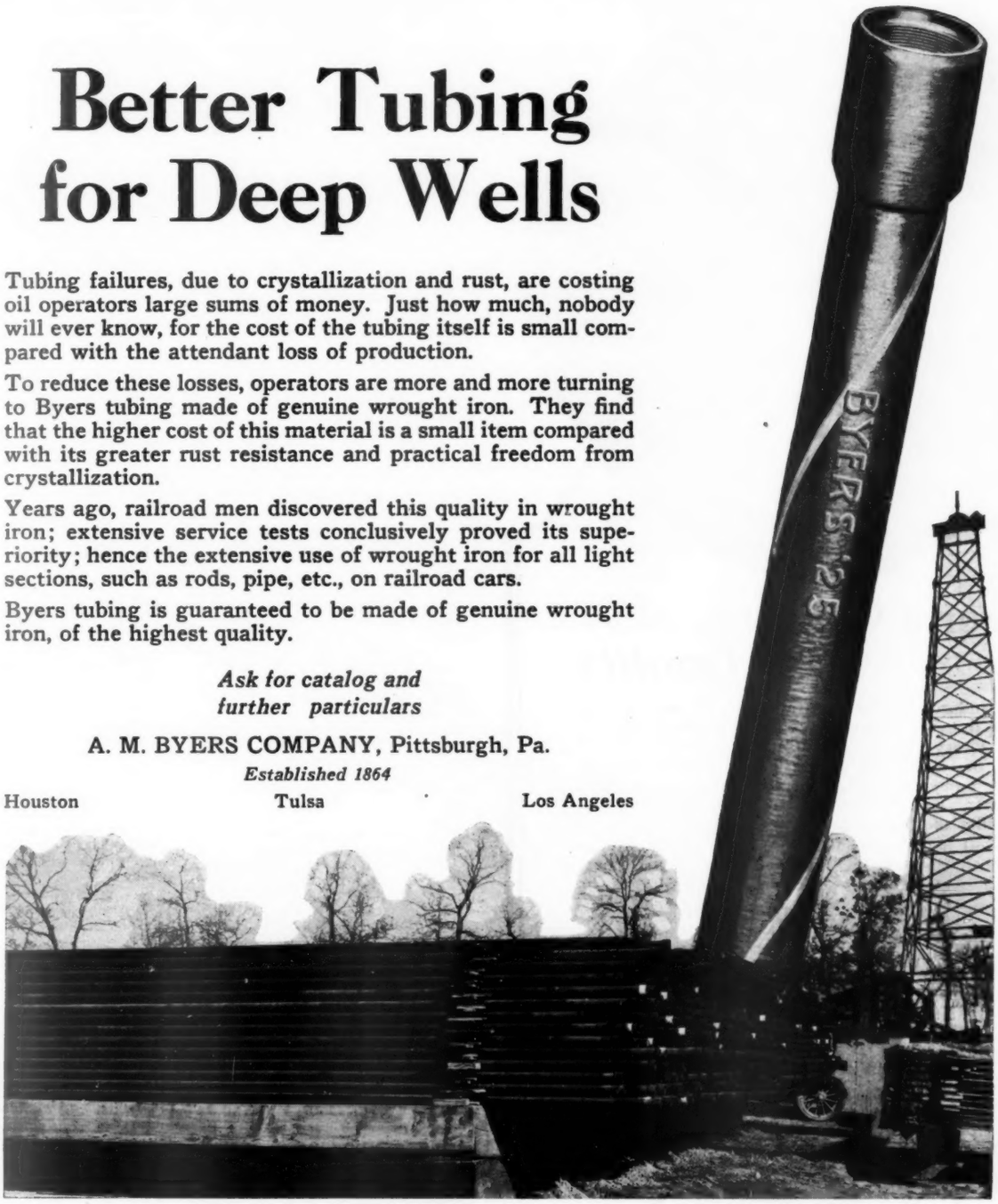

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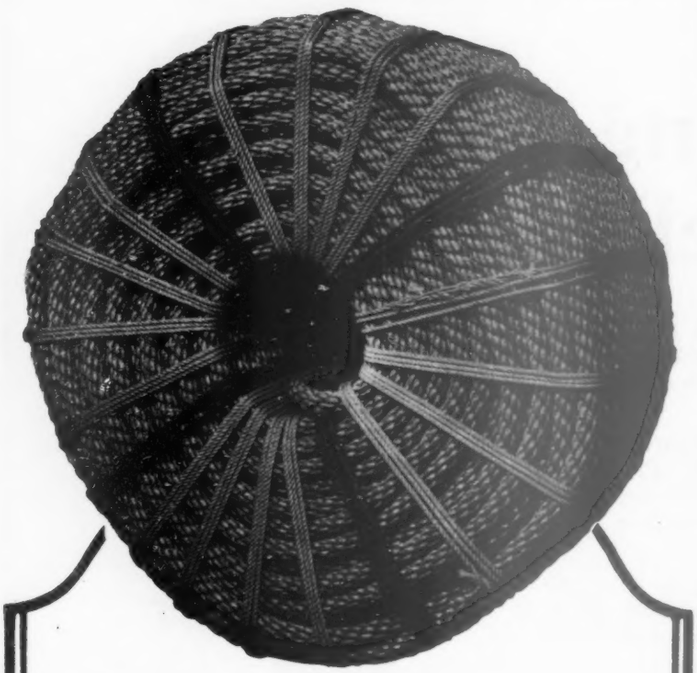

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CALIFORNIA GASOLINE PRODUCTION AND DEMAND IN COAST MARKET

By George W. H. Reid

A study of the gasoline production and the automobile registration as it affects California and the West Coast reveals certain information of interest to the petroleum industry as a whole. That portion of the American petroleum industry operating east of the Rocky Mountains, often views the California situation with alarm, prophesying much or little, good or bad, and often with little success. The present situation in California, as it affects the entire petroleum structure, has been carefully analyzed and checked, and the industry apparently knows what to expect from the West Coast in the near future—unless something happens.

The automobile situation is of interest. Registration of cars and trucks in the United States for 1925, was 20,204,260. This represents a gain over 1924 of 2,477,753 cars and trucks, or 13.9 per cent. Registration in 1924 was 17,726,507.

The situation in California of both cars and trucks for the same years was:

Registration, 1924	1,319,394
Registration, 1925	1,443,985
Gain of 9.3 per cent or	124,591

The 1925 registration in California consisted of 1,227,461 cars and 216,524 trucks.

The following table shows the registration of cars and trucks in certain of the states leading in numbers of cars, and the sequence into which the states fall when tabulated:

Cars and Trucks Registered, 1925

New York	1,597,031
California	1,443,985
Ohio	1,400,000
Pennsylvania	1,356,919
Illinois	1,266,791

When considering passenger cars alone, the sequence is changed and Ohio assumes second place.

Cars Alone Registered, 1925

New York	1,302,565
Ohio	1,240,000
California	1,227,461
Pennsylvania	1,163,204
Illinois	1,105,713

Vieing for sixth and seventh place in the table we find Michigan and Texas:

	Cars	Trucks	Total 1925
Michigan	888,300	104,526	992,826
Texas	888,910	88,582	977,572

There seems to be little reason for hesitating to prophesy that 1926 registrations will reveal a total of seven states in the one million automobile class as Texas and Michigan are both capable of absorbing a great number of new cars this year.

So far as the automobile situation can affect the gasoline situation, by absorbing a certain great amount of the gasoline produced, the states comprising the territory which may be considered the usual market for California gasoline, are about as follows:

Cars and Trucks, 1925

California	1,443,985
Washington	341,713
Oregon	215,826
Arizona	68,597
Nevada	21,377
Total	2,091,498

These two million cars and trucks comprise the more or less permanent "rolling" market for gasoline manufactured in California and on the West Coast. Certainly the one and a half million "native," or "state," cars and trucks are strictly California's market, and while a certain proportion of the other half million may be "anybody's" market, the bulk of the area is served by the West Coast refineries.

With California supplying her own and adjacent territory to the extent of two million cars and trucks, this leaves the industry east of the Rockies 18,000,000 to serve, compete for, or bargain with.

Refining Capacity

According to Bureau of Mines publications at hand, the State of California has 83 refineries, owned by 58 companies, of which plants 51 were operating at the close of 1925. The total number of refineries in the United States, according to latest reports is 584, or 501 plants outside of California.

Within the district known as the Los Angeles Basin there are 47 refineries. The status at the close of last year was:

Capacity of 29 plants operating, 357,150 bbls. daily; capacity of 18 plants shut down, 37,800 bbls. daily; capacity of 47 plants located in Los Angeles Basin 394,950 bbls. daily.

The status of the remaining 36 plants located in other sections of the State was:

Capacity of 22 plans operating, 312,570 bbls. daily; capacity of 14 plants shut down, 25,350 bbls. daily; capacity of 36 plants outside of Los Angeles Basin, 337,920 bbls. daily.

The status of the total, or 83 plants in California, was:

Capacity of 51 plants in operation, 669,720 bbls. daily; capacity of 32 plants shut down, 63,150 bbls. daily; capacity of 83 plants in California, 732,870 bbls. daily.

The production of refinery gasoline from plants operating, estimated about 80 per cent of capacity, is given as follows: 156,292,798 gallons straight run; 63.325 gallons cracked or synthetic; 156,357,123 gallons total from crude petroleum; 29,454,070 gallons natural gas gasoline; this is at the rate of 6,194,039 gallons a day, in barrels 4,424,314, barrels a month (December), or 147,477 bbls. daily; 185,821,193 gallons gasoline produced in California in December, 1925.

Cracking

With reference to the item of 63,325 gallons of cracked or synthetic gasoline produced during December, 1925, in California, the status of the cracking unit situation in California is of interest.

In October, 1925, it may be noted here, the cracked gasoline production is given at 348,577 gallons.

According to latest available information the following condition is found as to companies owning, building or operating cracking units:

Union Oil Co., Wilmington plant, 1 unit Cross operating, 4 units going in.

Richfield Oil Co., Haynes plant, 4 units Cross going in.

Pan American Petroleum Corp., Watson plant, operating 19 Black units.

Wilshire Oil Co., Vernon plant, experimenting, own.

Shell Oil Co., Wilmington-Martinez plant, Dubbs & Trumble, eight 500-bbl. units, four buliding.

Associated Oil Co., Avon, Dubbs.

Mohawk Oil Co., Coalinga plant, Dubbs.

Standard Oil Co., (California) Richmond plant, experimenting, own. Hanna-Clark-Dubbs unit.

General Petroleum Corp., Vernon plant, listed as Trumble or Greenstreet.

The reported production of only 63,325 gallons during one month is seemingly of little importance or consequence when compared with Mid-Continent figure, for example, but there is every indication that the expansion of the cracking methods will be great in the near future.

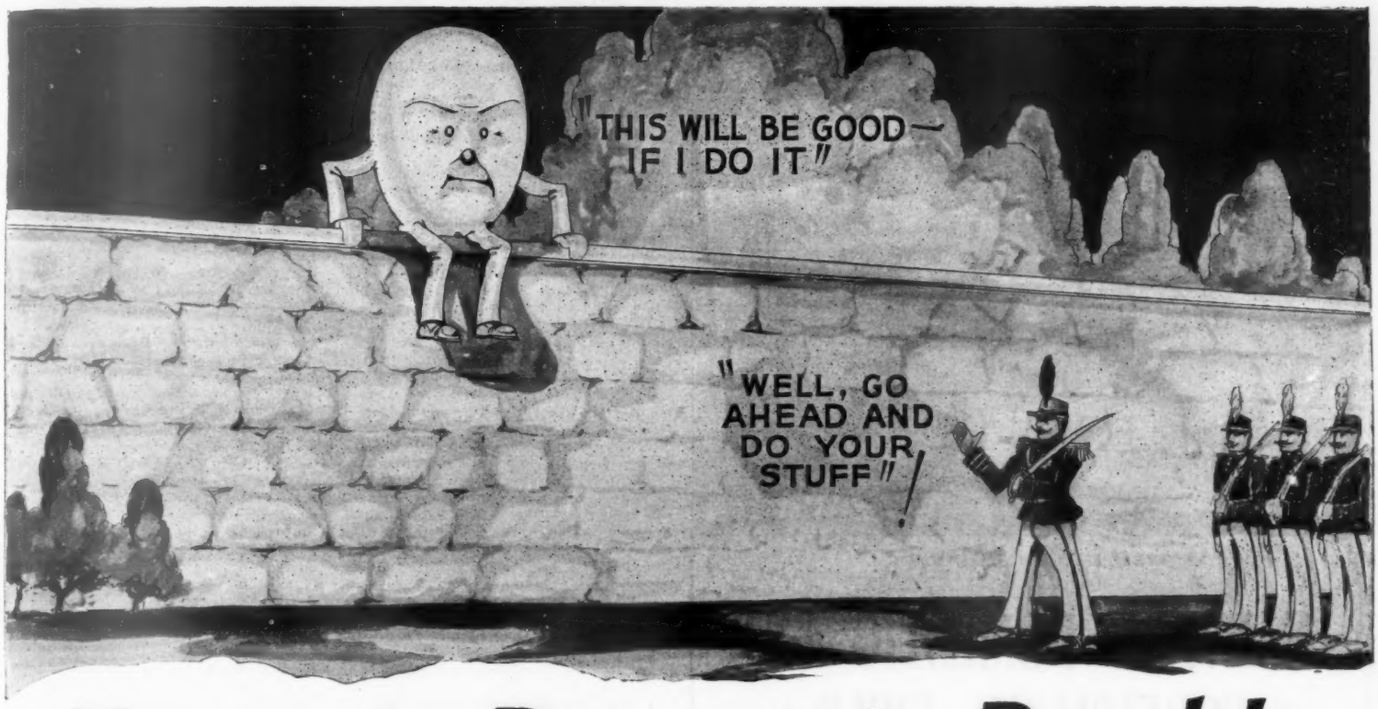
Natural Gasoline

Late figures indicate that about 162 gasoline plants of various types have been constructed in California. Of this total, 142 plants reported as operating on December 1, 1925.

These plans range in capacity from 750 gallons daily upward, with plants producing 10,000 to 20,000 gallons daily, possibly the most popular. The gasoline manufacturers usually operate several plants, or several companies operating plants are really one company, which conditions make it difficult to state the actual number of operating companies. One of the largest, if not the largest, organizations in the manufacture of gasoline in California, is that of the Pacific Gasoline Corp., which owns and operates 25 gasoline plants, having a combined capacity of 221,000 gallons daily, with all this production within California.

The natural gasoline production for December, 1925, in California was shown as 29,464,070 gallons for the month, or 982,135 gallons daily during the month. In barrels, 701,525 bbls. were produced in December, or 23,384 bbls. daily.

This gasoline is produced from four types of plants, there being in the State:



Humpty-Dumpty's Double

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Humpty Dumpty's classic fall is being duplicated by the casing in a hundred wells in every part of the oil country, every year. Right now, perhaps, some operator is paying a good, stiff price for neglecting to give his casing the sure protection that a Bovaird Grip Casing Spider assures.

Old-fashioned, inadequate equipment is the "bad egg" that is costing the Oil Industry such a large, and totally unnecessary, sum for dropped casing. Stop depending on poor equipment and you will stop these losses on *your* wells. It *CAN* be done with a BOVAIRD Grip CASING SPIDER!

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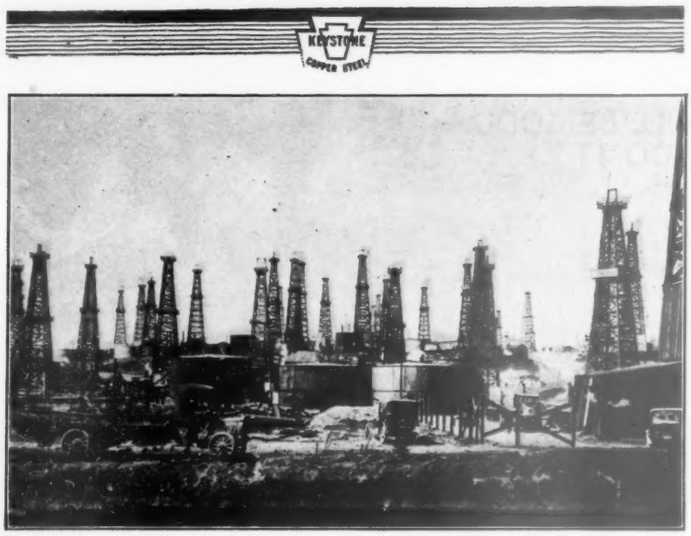
A good name to tie to—



2,000-Bbl. Maloneys, Signal Hill, Cal.

IN EVERY DOMESTIC AND FOREIGN OIL FIELD

you'll find the MALONEY—the pioneer bolted steel tank—on duty.

MALONEY'S world-wide popularity is the result of mechanical supremacy. The patented Maloney "crimp" at seams and joints gives accurate fit of parts without calking. Strongly reinforced seams insure vapor tightness and elimination of evaporation. Construction is of rust-resisting Keystone Copper Steel, the most durable of sheet steel. Valve and thief-hatch equipment are the best the market affords. Allow us to quote on your tank requirements.

Distributors with adequate stocks at all principal petroleum points.

"Alone in Quality"

MALONEY TANK MFG. COMPANY
Tulsa, Okla.

12 to 3,000 Bbls. Capacity

Packed in Steel-Bound Crates for Export

"Buck" Type Vacuum Pressure Valves and Vacuum Breakers Furnished

MADE OF KEYSTONE COPPER STEEL — MALONEY PATENTED BOLTED COPPER-STEEL — MADE OF KEYSTONE COPPER STEEL

MALONEY

ALONE!

117 absorption plants; 18 compression plants; 24 combination of compression and absorption; 3 charcoal absorption plants.

According to the Bureau of Mines' figures, the following table was compiled for month of December, 1925:

Operating absorption plants produced 18,413,038 gallons, or 1,295 gallons per 1,000 feet.

Operating compression plants, produced 199,584 gallons, or 664 gallons per 1,000 feet.

Operating combination absorption and compression plants produced 6,924,998 gallons, or 1,333 gallons per 1,000 feet.

Operating oil and charcoal absorption plants produced 3,904,445 gallons, or 1,610 gallons per 1,000 feet.

Total produced, 29,464,070, or an average of 1,225 gallons per 1,000 feet.

The total natural gas treated in December was 21,556,637,000 feet.

This indicates the extensive employment of the absorption type plant as preferable to the compression plant, and also discloses certain information as to general efficiency of the four types in operation.

The foregoing then, is the analysis of the automobile registrations, the straight run refinery, synthetic, and natural gasoline production. The refineries of the State of Washington, Oregon and Arizona have not been included in the survey of gasoline production, because of the smallness of operations in those states. The latest figures are not available for Washington and Oregon, but very little refining is done there, and Arizona has only three plants with a total capacity of 2,000 bbls. daily.

It has been previously stated that the daily gasoline production of California amounted to 6,194,039 gallons during December, 1925. The automobile registration for the district which California serves totals only 2,091,498 cars and trucks. There was being produced in December then, about three gallons daily for every car and truck registered in the area included. Add to this the unknown consumption of gasoline by users such as stoves, cleaners, stationary gasoline engines, and numerous other industrial enterprises, then add to that the undeterminable gallonage of gasoline absorbed by the tourists.

In addition to the hypothetical total consumption, according to the above items there is the important export business of the State is large in itself. A certain proportion of the exported gasoline finds its way to the Gulf Coast ports and the eastern seaboard, but great quantities of it are cased by the numerous canneries and shipped to foreign countries.

KENTUCKY-TENNESSEE

(Continued from Page 82)

Brownfield lease, is reported at 2 bbls. from a depth of 1,285 feet.

Among the drilling wells, Wm. C. Zimmer is shut down at 395 feet at his No. 10 on the John W. Covington Block 8 lease, while the American National Bank Co. is shut down at No. 11 on the Gillespie 50 acres at a depth of 20 feet. Caskey & Pryor are down around 300 feet at No. 8 W. R. Price. Dr. W. B. Caudle and others are around 300 feet at No. 5 J. T. Vance. Brand & Henderson or the Moken Oil Co. reports its No. 5 J. M. Morgan down close to 1,050 feet. Zev Oil Co's. No. 3 E. G. Savage is around 500 feet. Lincoln Oil Producing Co. is down around 300 feet with No. 4 C. E. Snell. T. A. Sheridan's No. 4 on the C. G. Davenport Attorney farm No. 1 at 1,316 feet, and shut down at 1,250 feet in No. 1 same lease, which started to drill deeper.

Other Developments

Only two completions were announced from Allen County where the roads are in a deplorable shape. J. J. Sayre's No. 19 Susan Moore, is reported dry at 404 feet, and the West Penn Oil Co's. No. 11 G. W. Pearson, was a duster at 300 feet.

Lee Moore is delayed by a fishing job at 60 feet at his No. 5 on his own farm, in the Scottsville Fields of Allen County. J. B. Hinton is due in the sand with his No. 6 A. A. Davenport lease, as is the American National Bank Co's. No. 13 Phoebe Oliver, and the White Plains Oil & Gas Co's No. 21 on the W. B. Tabor lease.

The Wah-Shah-She Oil Co., is moving the rig from the dry hole on the R. R. Kelley lease, northeast of Griffith, near the Benany Store in the Owensboro district to the R. B. Power lease, for a second well. C. E. Daugherty is drilling No. 9 on the Lucinda Crowe 153 acres, 400 feet east of No. 6 well on the same lease. The Davies County Oil Co. is near the Jett sand with No. 5 Howard lease, and 400 feet southwest of No. 4, in the King Pool. Petroleum Extraction Co. is around 350 feet in a test on the Kirk & Woodward lease. Bert Thompson expects to give his No. 3 on the Gabbard 100 acres a shot in the Barlow sand in hopes of making a producer from it. This well got salt water in the Jackson sand above the Barlow. The Pennsylvania-Indiana Oil Co. is drilling No. 2 on the Laura Mercer, 400 feet west of No. 1. Same company is drilling No. 12 on the John N. Swope 116 acres, in the Swope Pool, and 200 feet east of No. 7, and 200 feet northeast of No. 9 same lease. White Plains Oil & Gas Co. is starting No. 2 on the J. J. Midkiff 219 acres, in the Midkiff Pool, which is an offset to the same company's No. 1 on the Orella Ralph lease. Gunther-Gant No. 3 of the Chicago Petroleum Co., and on the 270 acre tract, in the Swope Pool, is spudding in. The White Plains Oil & Gas Co. is due in the Jett sand at its test on the V. Brown lease, in the Midkiff Pool.

In the Franklin district of Simpson County, Mullen & Reagle's second test on the John Pierce lease, is reported good for 10 bbls. at 599 feet.

Eastern Division

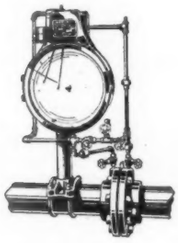
Eastern Kentucky has a future as a producer of oil and gas, although quietude prevails now, due to snows and bad roads. This should prove a banner year for the Big Sandy Valley area, as the talk of operators is that they are going to increase their production if possible. There is no doubt a lot of oil and gas development will be done in Johnson, Lawrence and Magoffin Counties, and Floyd, Pike, Knott and Morgan Counties are coming more into the limelight. Most of the counties in the eastern half of the state are attracting less attention of the oil and gas people.

The situation in Johnson County involves production from two fields; one known as the Berea Field which extends along the Warfield anticlinal in a southwesterly direction square through Johnson County. This anticline is well defined, having its main fault and axis at a place on Big Paint Creek known as Fish Trap. Much prospecting work for oil has been done along the line of this structure, the sand having always been present, and oil having been found in every well drilled. The wells were not large, but produce a very high quality crude. There has been close to 50 of these small wells drilled, beginning at Paintsville and extending in a rather broad area westerly to the mouth of McKenzie Branch and Gullett Branch of Big Paint Creek.

It has often been predicted that the field extending from the head of Blaine in Lawrence County, southerly across Johnson County, would be of very wide extent and of great importance and that it would eventually connect up with the Magoffin County Field; in fact it seems apparent that this is all one great continuous oil structure, which bids fair to be the leading oil field of the east end of Kentucky. Development work has followed this structure south to Red Bush section, and further to the southwest along Upper Laurel Creek, Briar Fork, Salyer Branch, on the H. C. Franklin, Chas. H. Williams, Nora Lemaster, Sal Williams, Dennis Williams, Cynthia Trimble, Cora Sayler, M. L. Frazier, Ross Williams, Hayden Williams and other farms farther to the southwest. Still further south is some of the R. G. Gillespie interests, which carries the development work down to near the mouth of Hargiss on Little Paint Creek; thence bringing production right up to the gas neighborhood, and the Big Paint Creek Dome which has its apex at the head of Pigeon and Hargiss Creeks and Little

(Continued on Page 106)

Westcott Orifice Meters are manufactured for use on the lease, in refinery and station service for the measurement of oil, gas, steam, and water.



The Seal of Accuracy—

When you remove the chart from a Westcott Orifice Meter you have a record upon whose accuracy you can confidently rely.

The design of the meter is such that the cumulative error from any twisting or bending action, friction, or play in joints shall never exceed ¼ of 1% in the calculated results. The uniform area of the mercury pots, large area of float, long lever arm, small angle of movement of the pen, minimum number of moving parts and few surfaces affected by friction—these are a few of the reasons for a meter that is accurate.

And above all, the real test of a meter is its accuracy. Wherever you see Westcott Orifice Meters, there, you may be sure, you will find a user who takes pride in worthy equipment.

Literature fully descriptive of all types of Metric Meters will be gladly furnished

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METRIC METAL WORKS

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Binks Spray Painting

The Field of Accelerated Tests

THERE is no place where the comparative merits of paint spraying outfits show up so quickly as in painting tanks, pipes, and refinery equipment. On broad, unbroken surfaces the spray gun will do an enormous day's work providing it produces a broad-faced spray of unvarying uniformity.

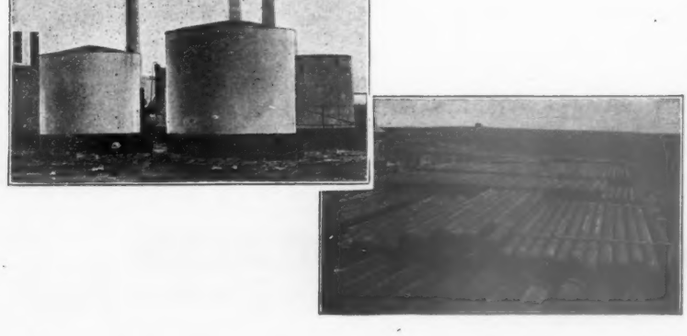
We have welcomed tests of *Binks* Spraying Outfits under these conditions where comparative results are quick and conclusive. The overwhelming preference for *Binks* Spray Painting Equipment in this field shows the way these tests are working out.

The reason for the surprisingly uniform application produced with a *Binks* Gun is the *Binks* Strait-Port Nozzle, which reduces the material to the consistency of a dense fog and causes it to strike the surface in a thick velvet-like spray and not in a sharp-edged, knife-like sheet.

Write for Bulletin 34 and information which our engineers will be glad to supply you showing what other concerns are doing and saving with Binks Spray Painting Outfits.

Binks Spray Equipment Company

3110 Carroll Avenue **Chicago, Ill.**



PLAN NEW RESEARCH ON LUBRICATING OILS

(Continued from Page 76)

oils as to their low temperature characteristics.

The United States Bureau of Mines also has under progress important investigations respecting lubrication. As the bureau interprets its functions, its work on lubricating oil is directed mainly to a study of the types of mineral substances available for producing these oils, to investigations of methods of obtaining them by mining, drilling or otherwise, to research on refining processes and on the effects of the refining processes on the characteristics of the finished oils. The unpublished statement of recommendations respecting this proposed research are as follows:

The manufacture of lubricating oil from these sources involves two main processes. First, the primary separation of the constituents of the mineral material into products of fairly definite characteristics; and, second, the refinement of these products into finished oils. The first process depends largely upon the relationships between the viscosities and volatilities of the oils involved and the bureau feels that for the present its resources can best be utilized in studying the production of lubricating oils from this standpoint.

Certain specific problems are being studied at the present time. At the Bartlesville, Okla., experiment station a refinery study is being made of commercial methods of distillation. This work has already indicated that greatly improved lubricating oils can be made by proper application of the scientific principles underlying distillation. At Bartlesville also a study is being made of the characteristics of typcial crude oils as it is well known that the characteristics of a crude oil largely control the characteristics of the lubricating oil which can be made from it. This study of crude oils has indicated that distillation alone is not sufficient to separate the lubricating fraction from certain other constituents in the crude which apparently have no lubricating value. Further studies are therefore being made on the commercial separation from crude oil of such constituents as waxes, asphalts, etc.

San Francisco Experiments

At the San Francisco laboratory of the bureau, a more direct study of lubricating oil has been undertaken. The work up to the present time is preliminary in nature but has shown how the problems involved may be attacked. During this preliminary work a number of the ordinary labaratory tests were studied and the results compared with engine tests, the results indicating in general that the methods used for the primary separation of crude oil into its main constituents are of utmost importance in the production of satisfactory lubricating oils. At the present time the method of engine testing adopted for this work is being standardized. Furthermore, oils which are considered to be equivalent in viscosity but made from several different typical crude oils are being studied to find out what differences in service value are caused by differences in the crude oils. These particular samples are finished products made from representative crudes by reliable refining companies.

The work in the future will depend somewhat on the outcome of the present tests. It is planned, however, to study the effect of different methods of fractionation on the characteristics of lubricating oils from the same crude and from different crudes. It is also planned to study the lubricating value, or lack of value, of some of the little known constituents of crude oil which are ordinarily removed in refining and wasted. From some work that has been done it seems possible that some of these materials could be included in the lubricating oils to good advantage.

The bureau is planning to continue its work along the lines indicated as it feels that it can be of most service to the proposed cooperative work by so doing.

UNIVERSITY ROYALTY NOT FOR BUILDINGS

AUSTIN, Tex., Mar. 20.—Royalty from oil produced on lands belonging to the University of Texas must go to the permanent fund of that institution, it was held by the Supreme Court which declared unconstitutional the act of the last Legislature attempting to assign the royalty to the University available fund and thus make it instantly usable for the construction of buildings on the campus. At this time the accumulated royalty is 2,800,303, the Big Lake Oil Co. remitting $142,605.67 for February and The Texon Co. $95,460.15. This money will now be placed to the credit of the permanent University fund, as will the monthly collections from that source, and invested by the University regents in securities, the income from which will be used in the construction of buildings. If it could be made to yield 5 per cent the present amount would produce $150,000 annually, but the principal will grow each month.

The opinion holds that oil is a part of the land itself, making a distinction between oil and other minerals and grass. The latter commodity is held part of the reality of the land. Nevertheless, it reproduces itself annually or oftener and its severences does not involve a permanent depletion of the value of the land itself, it being pointed out definitely in the opinion that oil does not replace itself and when once removed is gone forever. It is stated that in taking the oil there is just as completely a final and permanent depletion of the value of the land as if the very soil itself were removed. For these reasons the removal of the oil is held to be a removal of a part of the very corpus of the estate itself.

At their March meeting the regents will begin consideration of offers of financial institutions looking to the loan of from $3,000,000 to $10,000,000 for building purposes, secured by the interest on the royalties.

TEXAS SEEKS RECOVERY OF HOG ISLAND FIELD

HOUSTON, Tex., Mar. 20.—Suit has been brought against the Humble Oil & Refining Co. by the State seeking recovery of Hog Island in San Jacinto Bay, off the Goose Creek Pool. Damages to the extent of $1,000,000 are asked. John Galliard, a wealthy landowner of Goose Creek, is made a party to the suit.

Hog Island comprises 200 acres. It was originally secured by patent by Ashbel Smith, a pioneer in the Coastal section of Texas. The State now alleges the patent was never perfected and that the island was never subject to patent rights. The oil company secured title from Galliard.

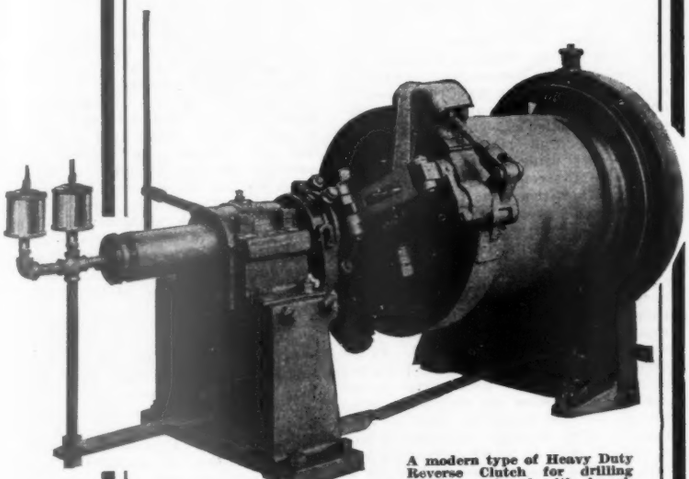
Suits involving millions of dollars have recently been instituted against oil companies operating in the Gulf Coast territory. These suits alleged faulty titles, but were thrown out of court when tried.

As a matter of fact nearly all lands in the Coastal area of Texas are subject to dispute over titles, owing to the fact that the State has been part of six different governments. It was under the Spanish flag, the French, once formed part of Mexico's dominions, then an independent republic, finally being annexed to the United States. The State seceded to the Confederacy and then back into the Union again. Grants or patents of land were given under each of these governments. The land had practically no value until the State began to develop commercially following the Civil War. The heirs of the original holders in many instances disappeared or displayed no interest until the advent of the oil industry and since that time the courts have been clogged with litigation concerning titles.

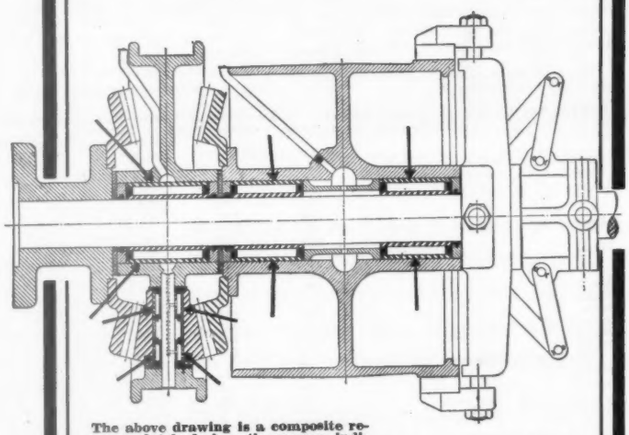
BRITISH OIL EXPO POSTPONED

It has been decided to postpone the proposed Oil Exhibition at the Crystal Palace, London. No definite date has been fixed.

AMERICAN Heavy Duty ROLLER Type "C" BEARINGS *for reverse clutches*



A modern type of Heavy Duty Reverse Clutch for drilling service, equipped with American Heavy Duty Type "C" Roller Bearings manufactured by "Oilwell."



The above drawing is a composite reverse clutch design, the arrows indicating the points at which roller bearings are usually placed. No radical change in design of clutch is required. Number and position of bearings vary, depending upon the size of the clutch.

The time has come when antiquated drilling equipment must give way to modern improvements. Many types of Reverse Clutches now in service are not only inadequate but actually obsolete in their design. These are in line to be scrapped because they do not and cannot handle their jobs with the degree of efficiency developed in modern Reverse Clutches equipped with roller bearings.

Advanced oil field engineering calls for better Reverse Clutches. Better drilling practice requires them. The more progressive manufacturers are preparing to fill the need.

The most vital point in the clutches used by producing companies is the bearing. The old style plain bearing is sadly out of date. Its continuance means the continuance of burned-out bearings, leaky lubrication and failure from overloads. These are its three chief griefs and fortunate, indeed, is the driller who can lay claim to the distinction of having escaped them.

From a common-sense, based-on-facts, engineering viewpoint, a Reverse Clutch in which roller bearings are installed will put an end to every one of these typical troubles. We are glad to announce this sure cure prescription and to promise early relief through the use of

AMERICAN HEAVY DUTY TYPE "C" ROLLER BEARINGS

which we have designed especially for Reverse Clutch service. These have been adapted to the clutches of some manufacturers while others are considering the redesign of their equipment to permit their use.

In any practically designed Reverse Clutch, American Heavy Duty Type "C" Roller Bearings will accomplish these highly desirable results:

1. They permit a constantly tight tension on the belt without danger of burning the bearings.
2. They make it possible to design the clutch so that the lubrication system will be absolutely leakless.
3. They permit the clutch to handle the inevitable overloads without failure or risk of failure.
4. They insure the longer life of the clutch.
5. They eliminate much of the general attention and repairs required by clutches having plain bearings.
6. They assure smoother operation; smoother starting, smoother reversing, smoother slowing down and stopping.

Ask your reverse clutch manufacturer to furnish one equipped with Heavy Duty Type "C" Roller Bearings for the sake of comparison. You'll be astonished at the difference.

LARGEST MANUFACTURERS OF ROLLER BEARINGS FOR INDUSTRIAL PURPOSES

AMERICAN ROLLER BEARING CO.
PITTSBURGH, PENNA.

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THE entire responsibility in the manufacture of Sheffield Sucker Rods enables us to state confidently that longer life and less pin breakage are offered in the use of this Sucker Rod.

SHEFFIELD
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Undue pin breakage has been eliminated through the perfection of the Sheffield Perfected Joint. And longer life has been assured through the use of a special analysis steel in the manufacture of both the joint and Rod. Made in three sizes: 5/8", 3/4", 7/8", in both Box and Pin and Double Pin types.

Sheffield Sucker Rods may be secured direct from our plant or from all stores of the International Supply Company.

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Successors to

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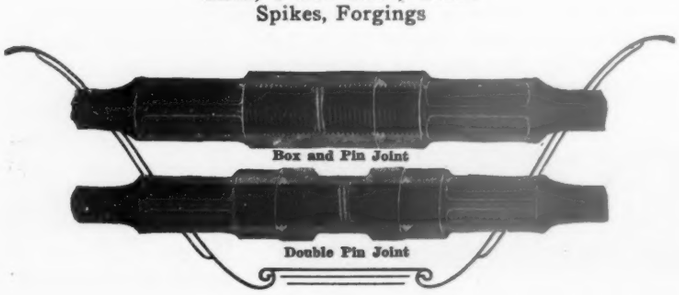
Manufacturers of New Billet Reinforcing Bars, Rail Steel Reinforcing Bars, Blue Annealed Sheets, Merchant Steel Bars, Merchant Iron Bars, Bolt and Nut Products, Sucker Rods, Pull Rods, Track Spikes, Forgings



Box and Pin Joint

Double Pin Joint

EXPERIENCES WITH COMBUSTION OF FUEL OIL IN POWER PLANTS

By J. F. Barley*

In the course of the Government Fuel Economy Survey of its own power plants, studies and tests have been made of various oil-burning equipments under power-plant boilers. There are now many types of burners being offered in the relatively limited field of power-plant use. The majority used may be grouped into two general classes—those using steam to effect the atomizing of the oil, and those using mechanical means.

Burners using steam have had the most prominence for a long period. The mechanical atomizing type of burner successfully applied on shipboard, pointed to a possible betterment in land work. The vision presented itself of a burner that would need no steam for atomizing, that would permit of air inlets or registers compactly arranged as a part of the entire burner, and that would only require the natural stack draft usually available in land boiler furnaces. Hence, rather recently there has been much development along this line, resulting in various types of burners.

In Table 1 are grouped test items chosen from many tests showing representative analyses of the products of combustion obtained with various burners installed in various types of furnaces. In all these tests the burners were handled by experts and represent practically the best obtainable for that particular arrangement. The boiler efficiencies ranged from 70 to 80 per cent. It will be noted that the burners using steam for atomizing were able to secure slightly better CO_2 and less O_2 without the presence of CO.

It is hardly proper to name such equipment an "oil burner." The mixing and burning is done in the furnace. It is quite important for it to have the proper shape and size to suit the particular burner used. The differences shown between the various mechanical burners would largely disappear if the correct furnace for each could be arranged. In the development of the mechanical burner much attention has been given to the devices for twisting the air and spraying the oil, but the important point is what happens after they get into the furnace. A cubic foot of oil at 60 degrees Fahrenheit requires about 11,000 feet of air at 60 degrees Fahrenheit for correct combustion. For combustion to progress it is necessary for a continuous stream of air to pass each small oil volume as it is sprayed into the furnace. The products of combustion must move away from the surface of this oil volume. This means that the air must have a different velocity or direction than the oil. Since twisting movements of air and oil imparted at the burner entrance is soon lost the importance of furnace shape and size is apparent.

In the combustion of an oil particle it is the carbon that is the more difficult to burn. It separates out as soot at the slightest provocation, and causes much heat loss. This may happen due to a chill as meeting with the boiler tubes, or a lack of air at the right moment. This may occur without the slightest indication in the usual flue gas analysis. To illustrate, the following data are taken from Bureau of Mines Bulletin 214, by H. Kreisinger and others. These samples were taken at a spot in a furnace just before the gases entered the tubes. They were quite representative, however, of completed combustion in some furnaces.

% CO_2	% O_2	% CO	Soot (Grams Per cu. ft.	Soot % of Carbon in oil	Heat in Soot % oil
11.6	5.0	0.0	0.174	9.5	6.3
11.2	5.6	0.0	0.123	7.1	4.8
12.4	3.9	0.0	0.123	6.5	4.4
12.3	4.5	0.0	0.237	11.9	8.0
14.2	2.0	0.1	0.076	3.6	2.4
14.5	1.2	0.2	0.172	7.5	5.0

It will be noted that there is a great heat loss even when there is plenty of O_2 and no CO. In the next to the last sample CO had appeared, but there was less loss due to soot. In general, however, along with CO and low O_2, loss due to soot may be anticipated as shown by the last sample. In ordinary testing practice, the special equipment necessary to determine the soot loss is not always available. The soot appears in the heat balance as a high "unaccounted for" loss. The analysis of the products of combustion without the soot factor being taken into consideration, may lead to false conceptions, particularly in the correct design of furnaces.

For each furnace arrangement there is a certain percentage of CO_2 that gives the best results. The rule of adjusting burners to secure a slight haze of smoke may at times be quite wrong, as this smoke haze can frequently be secured with various percentages of CO_2 for the same furnace. Furnaces in which the carbon of the oil constantly tends to "drop out" as soot often give greater overall efficiencies with considerable excess air. The exact way of establishing the correct CO_2 for a furnace is by a test where the water and oil is weighed.

In Table 2 are given some typical examples of the amount of steam required by the two different classes of burners for atomizing and for oil pump and heater. It might be expected that the mechanical type would require more steam for pump-

*Fuel engineer, Bureau of Mines, Department of Commerce.

TABLE No. 1.—Representative Analyses of Products of Combustion of Fuel Oil Obtained With Various Burners in Various Types of Furnaces

Type of Burner—	Temp. of	Pressure of Oil, lbs. per	Dry Products of Combustion— CO_2	CO_2	CO_2
Mechanical, natural draft:					
Make "A"	230	121	11.6	5.4	0.1
	185	152	10.2	7.4	0.0
	242	101	10.1	7.4	0.0
Make "B"	285	195	10.3	6.4	0.0
	252	150	10.6	6.6	0.2
Make "C"	66	87	12.7	2.9	0.0
	326	248	12.2	4.2	0.1
	254	183	10.4	6.8	0.0
Make "D"	264	182	11.4	5.3	0.1
Make "E"	324	205	12.2	4.0	0.2
Make "F"	286	202	11.9	4.0	0.3
Make "G"	261	221	11.1	5.7	0.0
Make "H"	260	139	12.9	3.6	0.1
Make "I"	204	247	12.4	4.3	0.0
Steam atomizing:					
Make "M"	142	46	13.3	2.8	0.0
Make "N"	194	43	14.1	2.2	Trace
	193	42	13.7	2.5	0.0

TABLE No. 2

Type of Burner—	Pounds of steam used for oil pump and heater per pound oil as fired.	Pounds of steam used for burner per pound oil as fired.	Total pounds of steam used per pound of oil.	Per cent of B.H.P. (total steam developed) used for oil pump and heater.	Per cent of B.H.P. (total steam developed) used for burner.	Total per cent of B.H.P. (Total steam developed) used.	Per cent of total heat of fuel to heat in steam used for oil pump and heater.	Per cent of total heat of fuel to heat in steam used for burner.	Per cent of total heat of fuel to heat in total steam used.
Mechanical, natural draft	0.093	.....	0.093	0.82	.....	0.82	0.61	.....	0.61
Mechanical, natural draft	0.154	.....	0.154	1.30	.....	1.30	1.00	.....	1.00
Mechanical, natural draft	0.103	.....	0.103	0.85	.....	0.85	0.66	.....	0.66
Steam atomizing	0.140	0.295	0.435	1.16	2.45	3.61	0.86	1.83	2.69
Steam atomizing	0.184	0.272	0.456	1.46	2.17	3.63	1.14	1.69	2.83

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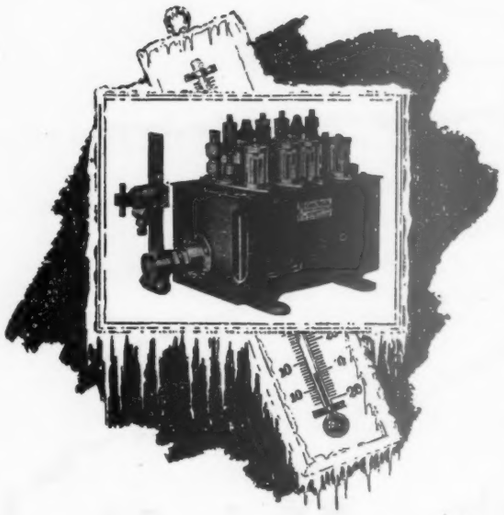

WHEN the thermometer drops to zero and the oil in the pipe lines congeals, it is human nature to forget the usual oiling or to neglect to give it the added attention required at this time. The result is that scored cylinders and frozen bearings prevail, tying up production.

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ing and heating the oil, but in actual practice the amount of steam used is affected by so many factors, such as efficiencies of relatively small pumps and heaters, amount of oil circulated, etc., that this consistency seldom appears, as is borne out by the table. The steam used for atomizing shown in the table is an example of excellent practice, with expert firemen under test conditions.

When the various burners are placed in the hands of ordinary firemen for general operating purposes, the following has been observed: He finds that the mechanical natural draft burner is very sensitive, and requires delicate adjustments to get the best results. Where several burners serve one furnace, each burner has its own peculiarities. Frequently the fireman will get a deposit of carbon in the furnace in the form of a mound two feet high. Later he may burn it up and not just understand how it all happened. The burner is affected appreciably by small changes in the draft, such as are caused by various wind velocities across the top of the stack. It requires constant attention to maintain any close setting. A damper on the boiler that can be moved extremely small amounts with accuracy, is needed. Careful damper adjustment gives better results that continued adjustment of the secondary air registers. In general, the fireman is told that he has the best results when he is just getting a light smoke. He is probably warned not to make too much smoke, so he uses plenty of air and does not try to get too near the limit. A test condition of 11.6 per cent CO_2 and 5.4 per cent O_2 drops to 9.6 per cent CO_2 and 7.4 per cent O_2. Under these conditions he usually has a nice looking flame, can carry his load, and he ceases to bother a great deal about refined adjustments for efficiency.

When the steam atomizing burner is placed in the hands of the regular operating fireman, he seems to be able to operate it more closely to test conditions than he can the mechanical natural draft type. He uses very little more steam. In one instance, a plant engineer declared his steam burners must be using at least 10 per cent of all the steam he made. Whenever there were periods in which he had difficulty in carrying the load, he quickly arrived at the conclusion that the trouble was due to the amount of steam used by the burners. When the steam was measured it was found he was using about 3 per cent. With some types of burners this will rise to as high as 5 per cent. Regular operating conditions of 13 per cent CO_2 are not unusual, for the better class of burner and furnace arrangements.

In making a comparison of the two types discussed, as far as efficiency only is concerned, the following might be considered. The mechanical natural draft type has the advantage of the steam type by, say 2 to 3 per cent of the total heat in the fuel chargeable to the latter's use of steam for atomizing. In order to compensate for this handicap, the steam type must be able to obtain better combustion, so that the loss in the dry flue gases is less than that obtained with the mechanical type. For example, a CO_2 content of 9.6 per cent gives about 3 per cent more loss in the dry flue gases than 13.0 per cent CO_2. Much effort and study have been put upon the furnace in the use and development of the steam type. The solution of the problem in the development of the mechanical natural draft type, which is at a disadvantage when compared to the forced draft type, is in furnace study rather than concentration on burner arrangements.

THE VALUE OF LEAKAGE TESTS ON NATURAL GAS TRANSMISSION LINES

E. L. Rawlins, assistant natural gas engineer Bureau of Mines, has issued a supplementary paper on the value of leakage tests on natural gas transmission lines to the report published in The Oil and Gas Journal of June 11, 1925. The following extracts are from his latest report:

The Bureau of Mines in cooperation with the Natural Gas Association of America is studying leakage losses from transmission lines. Tests have been conducted on lines with screwed, rubber-coupled and welded joints.

A careful study of the costs involved in purchasing natural gas at the well and pumping it through transmission lines shows that for this group of 26 lines the gas, in the lines, has an average value of 27 cents per thousand cubic feet.

Gas pipe line operators can and should keep an accurate account of the amount of gas lost from their transmission systems, by making leakage tests at frequent intervals. Unless systematic leakage surveys are made, leaks will be present and remain undetected. For example, a leakage survey of one system of lines, approximately equivalent to 100 miles of 3-inch pipe, showed that if the leakage rate found in the survey had been the same over a period of ten years, and gas had an average value of only 7 cents per thousand feet, the accrued loss, for ten years with interest at 7 per cent, compounded annually, would have been $724,400. Results from leakage tests on other systems indicate that this loss could have been reduced to less than $100,000 by systematic leakage surveys and the elimination of a large part of the leakage from the system.

If a line is being repaired to reduce the leakage loss, tests conducted after each repair will show how effective it is in reducing the leakage.

Leakage tests on new lines before they are put into operation reveal the actual leakage conditions of the lines, and indicate repairs needed that will eliminate the greater part of the leakage.

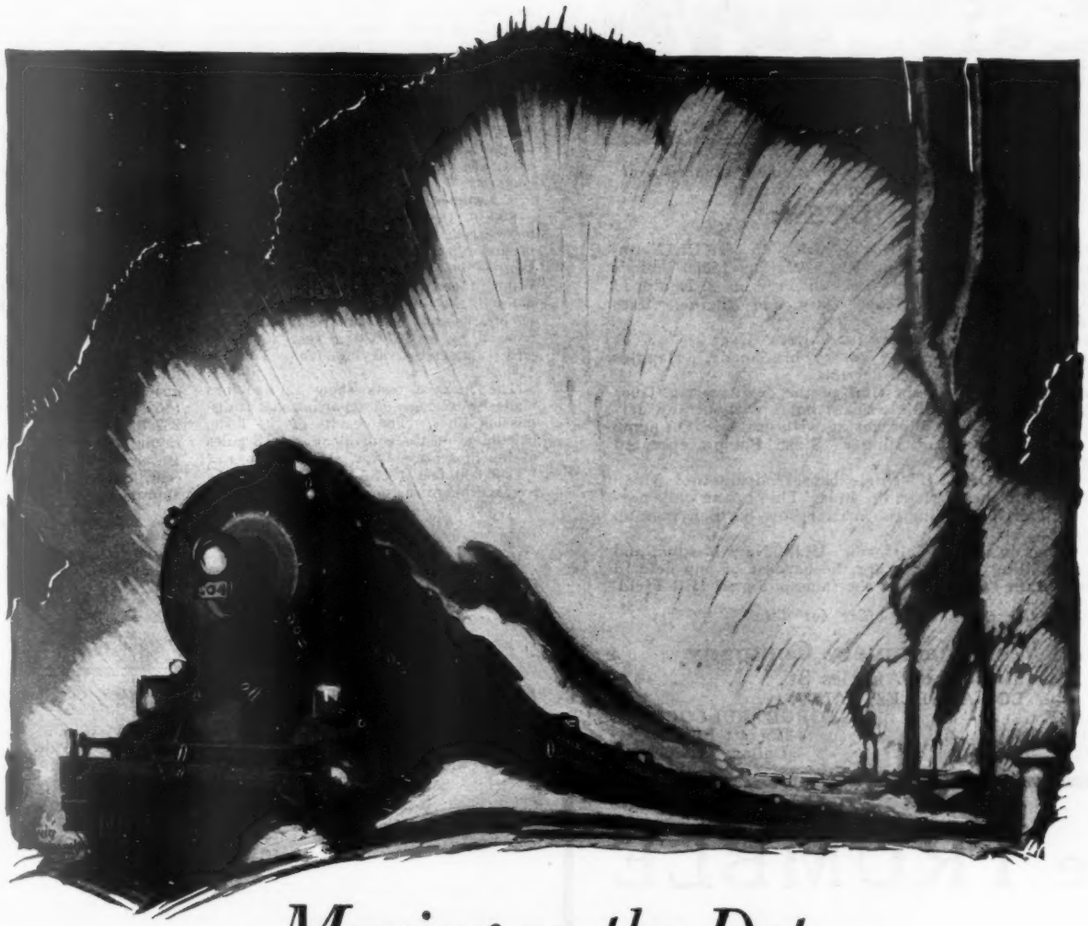
Leakage tests on old lines show how capital can best be invested in repairs and reconstruction. In some cases, the line is in such condition that it should be abandoned and the pipe reclaimed; as a new line will be paid for in a few years from the saving due to the reduction of leakage.

Leakage tests on pipe lines often reveal losses in operation that are due not necessarily to faulty construction, but to sources unsuspected by the line walker. One interesting case of this condition was noticed in a leakage test on an operating pipe line. A gas well with a rock pressure of approximately 100 pounds per square inch was "shut off" with a gate valve from a line operating at a pressure of 250 pounds per square inch. The gate valve was leaking approximately 20,000,000 feet of gas a year from the pipe line into the well.

One of the common sources of leakage is through outlet gate valves that are not bull-plugged properly. One of the principal causes for the usually large item of "unaccounted for gas" is the gas lost by excessive blowing of drips.

The tests that have been made on operating pipe lines show that a large percentage of the leakage is through screw fittings on drip connections, taps, and other connections on the lines. It is difficult to eliminate this leakage after the drips and connections are installed and the line put into operation. Special tests were run on the 5 3/16-inch and 6⅝-inch rubber-coupled lines both before any connections were made to the lines and after they had been completed. All of the screwed fittings were caulked with hot lead. The tests showed that there was almost no leakage from these connections.

Leakage tests on transmission lines have a beneficial psychological effect upon the field men. While the tests are not intended as a check on the efficiency of the individual operators, but are made in order to assist them, they want the actual tests to show a low rate of leakage and use every means in their power to keep the sources of leakage in the lines repaired and the lines themselves in the best possible operating condition. The men who do the actual construction work



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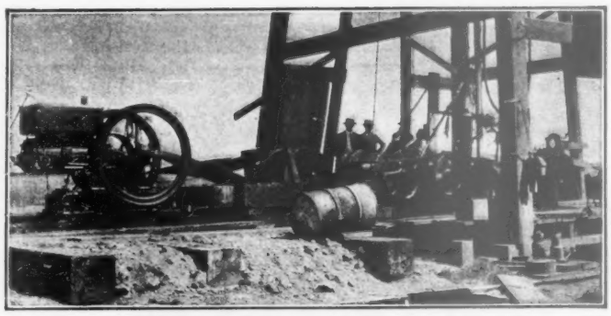

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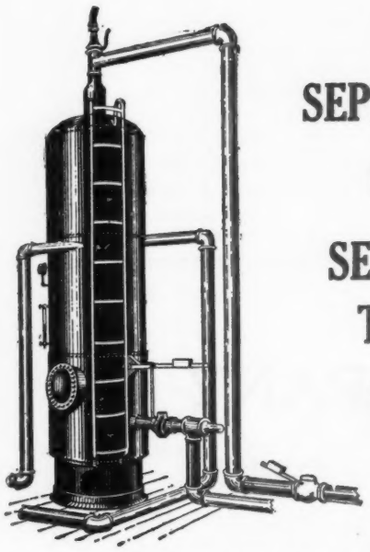

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on pipe lines are interested when they are told the results of their work with regard to leakage; the tests give them concrete results for which to work. At first, men in the field, who cooperated in making the experimental tests wondered why the work was being done. In every case, they were willing listeners and were enthusiastic in the work when the actual concrete results of the tests were explained to them. They saw actual leaks that they considered negligible and were surprised when they learned the value of the gas that escaped through them in one year. Field operators, who understand the application of leakage tests to their operating lines and the elimination of the small leaks that appear insignificant, are valuable assets to an operating company.

Leakage Through Small Holes

One of the principal causes of leakage losses from transmission lines is the lack of understanding of the quantity of gas that is lost through small leaks. The value of gas that escapes through small holes in the pipe, at an average pressure of 300 pounds per square inch, varies from $173 to $41,630 a year for holes with diameters varying from 1/64 to ¼-inch.

The leakage tests show the savings made by testing and repairing gas transmission lines. The results of the tests, calculated on the equivalent of 22.3 miles of 3-inch screwed pipe, showed a loss of 95,266,000 feet ($25,714) a year at the average operating pressures of the lines. The repairs that were made reduced this leakage to 49,249,000 feet ($13,291) a year, so that the annual reduction in leakage, or amount saved, is 46,017,000 feet, or $12,423.

The tests on the equivalent of 73.3 miles of 3-inch rubber-coupled line showed a loss of 236,191,000 feet ($63,768) a year, at the average operating pressures of the lines. After making repairs to the lines, this loss was reduced to 81,291,000 feet ($21,941) a year, which is a reduction of 154,900,000 cubic feet, or an annual saving of $41,827.

The tests on the equivalent of 113 miles of 3-inch welded line showed a loss of 100,506,000 feet ($27,148) a year at the average operating pressures of the lines. The repairs that were made reduced this loss to 64,296,000 feet ($17,370) a year, which is a reduction of 36,210,000 feet or an annual saving of $9,778.

The natural gas lines described, if taken together, would represent a transmission system containing the equivalent of 209.6 miles of 3-inch pipe. The initial tests showed a leakage rate from the lines of 432,540,000 feet ($116,300) a year at the average operating pressures of the lines. The repairs that were made reduced this leakage to 194,836,000 feet ($52,602) a year. This is a reduction of 237,704,000 feet a year, or an annual saving of $64,208. This saving for a 10-year period, with interest at 7 per cent, compounded annually, amounts to approximately $1,172,740.

Flow of Gas Through Different Sizes of Holes Into the Atmosphere

Diameter of Hole	LOSS PER YEAR (Gravity—0.633) At 100 Lbs. Per Sq. in. Gauge		At 200 Lbs. Per Sq. in. Gauge		At 300 Lbs. Per Sq. in. Gauge		At 400 Lbs. Per Sq. in. Gauge	
Inches	M.Cu.Ft.	Dollars	M.Cu.Ft.	Dollars	M.Cu.Ft.	Dollars	M.Cu.Ft.	Dollars
1/64	223	$ 60	427	$ 115	640	$ 173	840	$ 227
1/32	788	213	1,524	411	2,260	610	3,032	819
1/16	3,415	922	6,570	1,773	9,830	2,652	12,980	3,505
⅛	14,870	4,015	28,220	7,620	41,600	11,230	55,150	14,880
3/16	30,830	8,330	58,000	15,670	85,900	23,190	113,400	30,640
¼	55,400	14,960	104,250	28,150	154,100	41,630	203,700	55,000

REFINERY RUNS OF CRUDE OIL—AND RECOVERIES, CONSUMPTION AND STOCKS OF GASOLINE DURING JANUARY, 1923-24-25 AND 26

Area and Year—	Crude Run Barrels	Gasoline Recovered Per Cent	*Prod'n. Gallons	†Consum't'n Gallons	Stocks at Refineries— January 1	Stocks at Refineries— January 31
Mid-Continent:						
Oklahoma-Kansas—						
1923	7,341,039	44.3	136,712,106	125,325,500	160,507,722	171,894,328
1924	6,117,459	42.5	109,238,932	98,519,063	138,199,798	148,919,667
1925	7,533,190	47.2	149,114,418	134,450,098	121,042,101	135,706,421
1926	7,741,000	50.6	164,606,000	136,374,000	118,546,000	146,778,000
Texas, except Gulf Coast—						
1923	1,959,505	32.1	26,396,415	25,572,796	13,090,637	13,914,256
1924	2,297,793	30.5	29,406,308	20,873,169	9,927,536	18,460,675
1925	3,109,843	34.5	45,043,728	42,047,888	18,021,818	21,017,658
1926	2,676,000	37.8	42,494,000	39,815,000	24,550,000	27,229,000
Arkansas-North Louisiana—						
1923	601,201	27.3	6,888,793	6,872,756	2,422,639	2,438,676
1924	836,590	19.9	6,985,469	6,403,522	2,552,788	3,134,735
1925	1,081,699	20.4	9,276,036	9,190,249	4,907,134	4,992,921
1926	1,434,000	21.2	12,795,000	12,514,000	4,352,000	4,633,000
Total Mid-Continent—						
1923	**9,901,745**	**40 8**	**169,997,314**	**157,771,052**	**176,020,998**	**188,247,260**
1924	**9,251,842**	**37.2**	**145,630,709**	**125,795,754**	**150,680,122**	**170,515,077**
1925	**11,724,732**	**41.3**	**203,434,182**	**185,688,235**	**143,971,053**	**161,717,000**
1926	**11,851,000**	**44.1**	**219,895,000**	**188,703,000**	**147,448,000**	**178,640,000**
Gulf Coast:						
Of Texas—						
1923	7,317,783	24.6	75,555,727	72,174,021	105,632,134	109,013,840
1924	6,908,814	29.1	84,408,652	93,521,448	137,471,933	128,359,137
1925	9,270,772	36.5	142,315,127	117,464,416	136,393,137	161,243,848
1926	9,471,000	41.2	163,830,000	138,877,000	179,764,000	207,717,000
Of Louisiana—						
1923	1,774,112	33.1	24,698,827	21,066,257	88,647,288	92,279,856
1924	3,256,182	28.3	38,774,484	43,214,054	107,039,647	102,600,077
1925	3,411,697	27.4	39,272,951	41,554,599	81,068,320	78,786,672
1926	4,377,000	24.6	45,293,000	78,920,000	206,242,000	172,615,000
Total Gulf Coast—						
1923	**9,091,895**	**26 3**	**100,254,554**	**93,240,280**	**194,279,422**	**201,293,696**
1924	**10,164,996**	**28.9**	**123,183,136**	**136,735,502**	**244,511,580**	**230,959,214**
1925	**12,682,469**	**34.0**	**181,588,078**	**159,019,015**	**217,461,457**	**240,030,520**
1926	**13,848,000**	**35.9**	**209,123,000**	**217,797,000**	**386,006,000**	**377,332,000**
California:						
‡1923	11,343,276	19.4	92,686,090	75,618,930	99,366,400	116,433,560
1924	11,947,148	23.0	115,330,234	99,789,515	293,488,882	309,029,601
1925	13,097,641	24.1	132,776,366	98,588,337	426,944,844	461,132,873
1926	16,426,000	24.1	166,245,000	158,989,000	405,216,000	412,472,000
Rocky Mountain:						
1923	2,188,089	54.5	50,133,061	46,328,478	103,241,253	107,045,836
1924	2,148,983	57.1	51,495,049	44,159,090	103,587,914	110,923,873
1925	1,811,835	58.0	44,133,838	34,105,423	115,836,469	125,864,884
1926	2,170,000	52.8	48,134,000	37,387,000	164,283,000	175,030,000
Indiana-Illinois:						
1923	4,177,390	48.6	85,265,481	55,760,438	103,810,391	133,315,434
1924	4,811,101	47.8	95,939,159	47,794,384	112,923,211	161,067,986
1925	5,584,284	49.6	116,375,685	92,356,222	159,148,566	183,168,029
1926	5,518,000	51.9	120,339,000	88,785,000	175,418,000	206,972,000
Pennsylvania:						
1923	1,891,799	33.6	26,673,215	18,196,725	20,346,095	28,822,585
1924	1,718,991	36.3	26,240,973	22,167,496	25,141,016	29,214,493
1925	1,993,136	37.2	31,138,915	24,684,197	26,672,169	33,126,887
1926	2,135,000	41.7	37,420,000	31,163,000	32,328,000	38,585,000
East Coast:						
1923	8,230,644	28.6	98,713,622	57,743,022	186,728,302	227,698,902
1924	10,970,170	29.8	137,503,240	93,655,839	246,275,432	290,122,853
1925	10,439,106	29.5	129,205,306	85,485,820	204,437,819	248,157,305
1926	9,309,000	37.9	147,748,000	125,385,000	337,629,000	359,992,000
United States:						
‡1923	**46,824,838**	**31.7**	**623,723,337**	**504,658,925**	**883,792,861**	**1,062,857,273**
1924	**51,013,231**	**32.4**	**695,322,500**	**570,007,560**	**1,176,608,157**	**1,301,833,097**
1925	**57,333,203**	**34.8**	**838,652,370**	**679,927,249**	**1,294,472,377**	**1,453,197,498**
1926	**61,257,000**	**36.8**	**948,904,000**	**848,209,000**	**1,648,328,000**	**1,749,023,000**

*Domestic production only; does not include imports.
†Domestic demand plus exports minus imports for "seaboard" areas. "Inland" areas are not affected by imports and exports. See "Gasoline Balance Sheet" for imports, exports and domestic demand of United States.
‡Figures not revised for consumption and stocks in 1923. When revised, the figures for consumption will be changed slightly—and the figures for stocks January 1 and December 31 will be increased about 100,000,000 gallons. Figures for 1924, 1925 and 1926 are revised.

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Eclipse Deepwell Pulling Machine

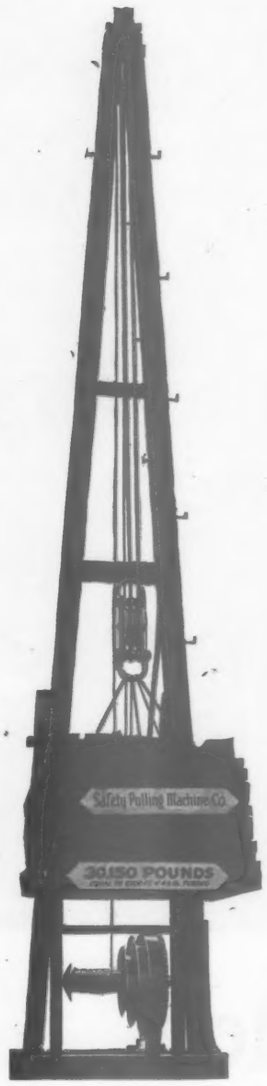
That one company recently purchased 6 of these machines to be used in a country 6,000 miles from the United States is proof this Pulling Machine is good.

Eclipse Deepwell up to 8000 ft. 2" Tubing Weight 3645

Wreckers also made to order, approximate weight 5000 lbs. One of our customers stated that he has pulled a weight equal to 100 tons with one of these machines.

Specifications Deep Well

Mast 8x10x36 ft., Douglass Fir A-Style Two Wheel Truck, two 16" Bronze bearing crown pulleys, 2½ Steel Pin mounted in malleable boxings. Large supporting plate 16" dia. between crown pulleys, eliminating any chance of bending pin.



Reel or Drum; 32 lb. 8¼ casing filled with concrete for winding drum, differentials banded with 3/16 band iron, brake surface 6"x40", choke brake style same as Star drilling machine.

The whole reel assembly is mounted on 2¾ square steel shaft extending clear through reel, secured by three heavy castings.

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UNIFORM ACCOUNTING COMMITTEE ISSUES APPROVED BALANCE SHEET

A complete balance sheet approved by the general committee on uniform methods of oil accounting of the American Petroleum Institute, of which M. W. Mattison, director of the division of taxation and accounting, is chairman, has been made public. This is the second installment of the final form of the balance sheet as approved at the Los Angeles meeting.

1. PREPAID CHARGES

This classification shall include expenses paid in advance, the benefit of which extends beyond the current account period, where the amount of prepayment may be exactly calculated at the close of the current accounting period.

The following sub-accounts shall be maintained:

1.0 Prepaid Interest
1.. Prepaid Rentals
1.2 Prepaid Taxes
1.3 Prepaid Insurance
1.4 Other Prepaid Expenses.

1. PREPAID CHARGES—10. Prepaid Interest

To this account shall be charged the amount of all interest paid by the company in advance of the maturity of the interest-bearing obligation.

To this account shall be credited the proportion of such prepaid interest applicable to the current accounting period.

1. PREPAID CHARGES—1.1 Prepaid Rentals

To this account shall be charged the amount of all rentals paid in advance.

To this account shall be credited the proportion of such prepaid rentals applicable to the current accounting period.

1 PREPAID CHARGES—1.2 Prepaid Taxes

To this account shall be charged the amount of all taxes paid in advance.

To this account shall be credited the proportion of such prepaid taxes applicable to the current accounting period.

1. PREPAID CHARGES—1.3 Prepaid Insurance

To this account shall be charged the amount of insurance premiums paid in advance.

To this account shall be credited the amount of expired insurance applicable to the current accounting period.

1. PREPAID CHARGES—1.4 Other Prepaid Expenses

To this account shall be charged all expenses paid in advance, which are not specifically chargeable to Account 1.0 and 1.3, inclusive.

To this account shall be credited the proportion of such prepaid expenses applicable to the current accounting period.

2. PERMANENT INVESTMENTS

This classification shall include investments in non-affiliated, affiliated and subsidiary companies not made for the purpose of temporary investment or surplus funds.

Non-affiliated companies are those in which the accounting company holds an ownership of 50 per cent or less, but has no control of management.

Affiliated companies are those whose assets and liabilities are not consolidated with those of the accounting company but in which affiliated companies the accounting company has:

(a) Control through ownership of 50 per cent or more of the voting stock, but does not own sufficient stock to justify consolidation.

(b) Control through contractural or other relationship where there is an ownership of less than 50 per cent of the voting stock.

Subsidiary companies are those whose assets and liabilities are consolidated with those of the holding or accounting company.

The consolidated balance sheet should be supported by a balance sheet of each affiliated company.

The following sub-accounts shall be maintained:

2.0 Investment in Non-affiliated Companies
2.1 Investments in Affiliated Companies
2.2 Investment in Subsidiary Companies.

2. PERMANENT INVESTMENTS—2.0 Investments in Non-affiliated Companies

This classification shall include investments of a permanent nature in the securities of non-affiliated companies:

Open accounts with non-affiliated companies shall be deemed subject to current settlement and shall be included in current assets or current liabilities.

The following sub-accounts shall be maintained:

2.00 Stocks Owned
2.01 Other Securities Owned.

2.0 Investments in Non-affiliated Companies—2.00 Stocks Owned

To this account shall be charged the cost of stocks acquired in non-affiliated companies.

To this account shall be credited the respective cost of such securities when sold, exchanged or otherwise disposed of.

2.0 Investments in Non-affiliated Companies—2.01 Other Securities Owned

To this account shall be charged the cost of securities other than shares of Capital Stock, of non-affiliated companies.

To this account shall be credited the respective cost of such securities when sold, exchanged or otherwise disposed of.

2. PERMANENT INVESTMENTS—2.1 Investments in Affiliated Companies

This classification shall include investments in stocks and other securities of, and advances and loans to, affiliated companies.

Open accounts with affiliated companies that are subject to current settlement as well as short term notes not subject to renewal, shall be included in current assets or current liabilities.

The following sub-accounts shall be maintained:

2.10 Stocks Owned
2.11 Other Securities Owned
2.12 Advances
2.13 Notes Receivable—Loans.
2.14 Accounts Receivable—Deferred.

2.1 Investments in Affiliated Companies—2.10 Stocks Owned

To this account shall be charged the cost of stocks acquired in affiliated companies.

To this account shall be credited the cost of such stocks when sold, exchanged, or otherwise disposed of.

2.1 Investments in Affiliated Companies—2.11 Other Securities Owned

To this account shall be charged the cost of securities, other than shares of Capital Stock of affiliated companies.

To this account shall be credited the respective cost of such securities as may be sold, exchanged, or otherwise disposed of.

2.1 Investments in Affiliated Companies—2.12 Advances

To this account shall be charged advances on open account made to affiliated companies for working capital, and such interest accrued thereon as may have been agreed upon.

To this account shall be credited cash receipts, notes, transfers, or other proper credits applicable in settlement of respective advances.

2.1 Investments in Affiliated Companies—2.13 Notes Receivable (Loans)

To this account shall be charged loans represented by Notes Receivable of Affiliated Companies and renewals thereof.

To this account shall be credited repayments and cancellations by renewal.

2.1 Investments in Affiliated Companies—2.14 Accounts Receivable Deferred

To this account shall be charged all sales of products and materials, or services rendered to affiliated companies, which are not subject to current settlement.

To this account shall be credited cash receipts, notes, transfers, or other proper credits applicable in settlement of respective charges.

2. PERMANENT INVESTMENTS—2.2 Investments in Subsidiary Companies

This classification shall include investments in stocks and other securities of, and advances, loans and, other charges to and by, Subsidiary Companies.

The following sub-accounts shall be maintained:

2.20 Stocks Owned
2.21 Other Securities Owned
2.22 Inter-Company Accounts.

2.2 Investments in Subsidiary Companies—2.20 Stocks Owned

To this account shall be charged the cost of stocks acquired in subsidiary companies.

On consolidation, the book equity (capital and surplus) of subsidiary companies existing at date of acquisition of stocks of subsidiary companies, shall be eliminated by applying such book equity as a credit against Account 2.20, Stock Owned. The balance, after applying such credit, will represent either investment in excess of book equity at date of acquisition or book equity in excess of investment at date of acquisition.

To this account shall be credited the cost of such stocks when sold, exchanged, or otherwise disposed of.

2.2 Investments in Subsidiary Companies—2.21 Other Securities Owned

To this account shall be charged the cost of securities, other than shares of Capital Stock, of subsidiary companies.

On consolidation, the par value of such securities owned may be applied in reduction of the corresponding liability or liabilities of the subsidiary company, after proper adjustment of cost, other than par, by eliminating premium therefrom, or adding discount thereto.

To this account shall be credited the cost of such securities when sold, exchanged, or otherwise disposed of.

2.2 Investment in Subsidiary Companies—2.22 Inter-company Accounts

Inter-company accounts, between companies whose balance sheets are consolidated, shall be classified under appropriate sub-accounts to meet the particular conditions of the accounting company.

In respect of each of such accounts, the debit balance on the books of one company will be offset by a corresponding credit on the books of another company, and upon consolidation, such balances will eliminate.

3. SINKING AND SPECIAL FUNDS

This classification shall include the amount of cash of the cost of securities placed in sinking, redemption, reserve and other special trust funds for the purpose of redeeming outstanding obligations, to cover future payments of pensions, uninsured losses or other special purposes. This account shall also include the cash surrender value of life insurance policies carried for the benefit of the accounting company.

Appropriate record shall be kept under each sub-account to indicate the particular sinking, redemption, reserve or special trust fund covered by the cash, securities, or

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accrued interest charged to such sub-account.

The following sub-accounts shall be maintained:

3.0 Uninvested Funds
3.1 United States Government Securities
3.2 Company Securities
3.3 Securities of Companies Not Affiliated
3.4 Securities of Affiliated and Subsidiary Companies
3.5 Unmatured Interest Receivable
3.6 Life Insurance—Employes.

3. SINKING AND SPECIAL TRUST FUNDS —3.0 Uninvested Funds

To this account shall be charged the amount of cash deposited in sinking, redemption, reserve, and other special trust funds, cash realized from the sale of securities previously deposited in such funds, cash received from insurance companies upon surrender, cancellation of maturity of policies carried on the lives of employes, and interest received on cash or securities held in such funds unless such interest is properly chargeable to Account 0.00, Cash on Hand and in Banks.

To this account shall be credited the amount of cash invested in securities, payments made in accordance with the purposes for which such funds were created, or cash withdrawn from such funds by appropriate action of the directors of the accounting company.

3. SINKING AND SPECIAL TRUST FUNDS —3.1 U. S. Government Securities

To this account shall be charged the cost of U. S. Government Securities purchased with cash previously deposited in sinking, redemption, reserve, and other special trust funds, and U. S. Government Securities placed in such funds.

To this account shall be credited the cost of U. S. Government Securities held in such funds when such securities are sold or withdrawn from such funds by appropriate action of the directors of the accounting company.

3. SINKING AND SPECIAL TRUST FUNDS —3.2 Company Securities

To this account shall be charged the cost of Company Securities purchased with cash previously deposited in sinking, redemption, reserve, and other special trust funds, and Company Securities placed in such funds.

To this account shall be credited, the cost of Company Securities held in such funds when such securities are sold or withdrawn from such funds by appropriate action of the directors of the accounting company.

3. SINKING AND SPECIAL TRUST FUNDS —3.3 Securities of Companies Not Affiliated

To this account shall be charged the cost of Securities of Companies Not Affiliated purchased with cash previously deposited in sinking, redemption, reserve and other special trust funds, and Securities of Companies Not Affiliated placed in such funds.

To this account shall be credited the cost of Securities or Companies Not Affiliated held in such funds when such securities are sold or withdrawn from such funds by appropriate action of the directors of the accounting company.

3. SINKING AND SPECIAL TRUST FUNDS —3.4 Securities of Affiliated and Subsidiary Companies

To this account shall be charged the cost of Securities of Affiliated and Subsidiary Companies purchased with cash previously deposited in sinking, redemption, reserve, and other special trust funds, and securities of Affiliated and Subsidiary Companies.

To this account shall be credited the cost of Securities of Affiliated and Subsidiary Companies held in such funds when such securities are sold or withdrawn from such funds by appropriate action of the directors of the accounting company.

3. SINKING AND SPECIAL TRUST FUNDS —3.5 Unmatured Interest Receivable

To this account shall be charged the amount of interest accrued during the current accounting period on cash and securities held in sinking, redemption, reserve, and other special trust funds, and accrued interest up to the date of purchase or deposit of securities held in such funds.

To this account shall be credited Unmatured Interest collected, and concurrently appropriate charge shall be made to Account 3.0, Uninvested Funds, if such interest is added to such funds, or to Account 0.00, Cash on Hand and in Banks, if such interest is deposited in regular accounts.

3. SINKING AND SPECIAL TRUST FUNDS —3.6 Life Insurance (Employes)

To this account shall be charged the cash surrender value of insurance policies carried on the lives of officers or employes for the benefit of the accounting company. The excess of premiums over cash surrender values shall be charged to an appropriate expense account.

To this account shall be credited the amount previously charged to the account when policies are surrendered, cancelled, or collected. In cast of collection of a policy, the excess of the amount collected over the cash surrender value previously charged to this account shall be credited to an appropriate income account.

4. FIXED (CAPITAL) ASSETS

This classification shall include lands, leases, rights-of-way, plant and equipment (including construction work in progress), and intangible items such as patents, copyrights, franchises, and goodwill.

The following sub-accounts shall be maintained.

4.0 Production Department—Oil and Gas.
4.1 Pipe Line Department
4.2 Storage Department
4.3 Refinery Department
4.4 Casinghead Gas Department
4.5 Tank Car Department
4.6 Marine Department
4.7 Sales (Marketing) Department
4.8 Other Operating Departments
4.9 Administrative Departments

4. FIXED (CAPITAL) ASSETS—4.0 Production Department (Oil and Gas)

This classification shall include fixed assets of the Production Department.

The following sub-accounts shall be maintained:

4.00 Lands and Leases
4.01 Plant and Equipment
4.09 Intangibles.

4.0 Production Department (Oil and Gas)—4.00 Lands and Leases

This classification shall include the cost of Production Department Lands and Leases, and any appreciation thereof.

The following sub-accounts shall be maintained:

4.000 Oil Lands and Leases—Cost
4.001 Gas Lands and Leases—Cost
4.002 Oil Lands and Leases—Appreciation March 1, 1913.
4.003 Gas Lands and Leases—Appreciation March 1, 1913.
4.004 Oil Lands and Leases—Discovery
4.005 Gas Lands and Leases—Discovery
4.006 Oil Lands and Leases Appraisal
4.007 Gas Lands and Leases—Appraisal
4.008 Other Lands and Leases
4.0080 Fee Lands
4.0081 Leases
4.0082 Rights-of-Way.

The titles of these sub-accounts are self-explanatory.

4.0 Production Department (Oil and Gas)—4.01 Plant and Equipment

This classification shall include the cost or appreciated value of buildings, machinery, equipment, and improvements.

Appropriate sub-accounts shall be maintained to meet the particular requirements of each accounting company.

To these sub-accounts shall be charged the cost or appreciated value of such buildings, machinery, equipment and improvements.

To these sub-accounts shall be credited, at the time of sale, abandonment, or other disposal, the amounts previously charged.

4.0 Production Department (Oil and Gas)—4.09 Intangibles

This classification shall include intangible items such as patents, copyrights, franchise, and goodwill specifically applicable to the Production Department.

The following sub-accounts shall be maintained:

4.090 Patents
4.091 Copyrights
4.093 Franchises
4.094 Goodwill.

The titles of these accounts are self-explanatory.

4. FIXED (CAPITAL) ASSETS—4.1 Pipe Line Department, 4.2 Storage Department, 4.3 Refinery Department, 4.4 Casinghead Gas Department, 4.5 Tank Car Department, 4.6 Marine Department, 4.7 Sales (Marketing) Department, 4.8 Other Operating Departments, 4.9 Administrative Department.

To appropriate sub-accounts maintained under each of the above accounts shall be charged the cost of appreciated value of lands, leases, plant and equipment, and intangibles applicable to each department.

To the appropriate sub-accounts shall be credited, at the time of sale, abandonment, or other disposal, the amounts previously charged.

5. DEFERRED CHARGES

This classification shall include discount on bonds or other securities, organization expense, and other charges applicable to subsequent accounting periods.

The following sub-accounts shall be maintained:

5.0 Discount on Bonds
5.1 Discount on Other Securities
5.2 Organization Expense
5.3 Other Deferred Charges.

5. DEFERRED CHARGES—5.0 Discount on Bonds, 5.1 Discount on Other Securities

To these accounts shall be charged the difference between the par or face value, and the amount realized from the sale of bonds, long-term notes, or other evidences of indebtedness, when the amount realized at time of original disposition is less than par or face value.

To these accounts shall also be charged expense incurred in connection with the issue and sale of such securities.

To these accounts shall be credited, during each accounting period, a proportion of such discount and expenses determined by the life of the security and the amount outstanding.

Accrued interest included in the original sale price of the bonds and other securities, shall be credited to Account 6.30, Accrued Interest Payable.

5. DEFERRED CHARGES—5.2 Organization Expenses

To this account shall be charged expenses incurred in the organization of the accounting company, such as incorporation fee, legal, accounting, and engineering expenses, printing of stock certificates, transfer fees, stamps, and similar expenses.

To this account shall be credited, during the current accounting period, such proportion of organization expenses as will amortize this account over the term of years fixed by the charter of the company, or over such shorter term as may seem proper.

5. DEFERRED CHARGES—5.3 Other Deferred Charges

To this account shall be charged other deferred items such as losses on disposition of capital assets, the inclusion of which would seriously affect income of the current accounting period.

To this account shall be credited, during each accounting period, the amounts allocated to that period.

It is recommended that this account be

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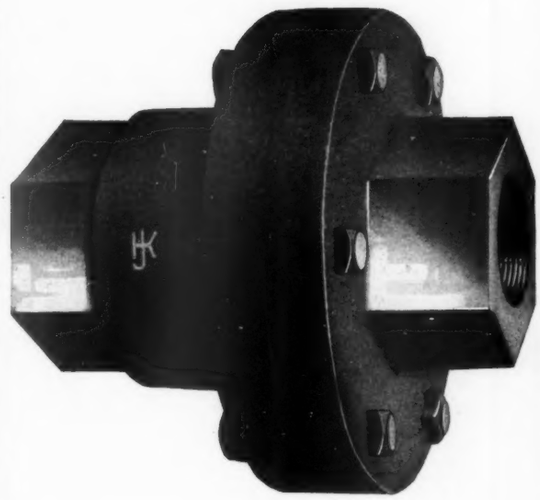

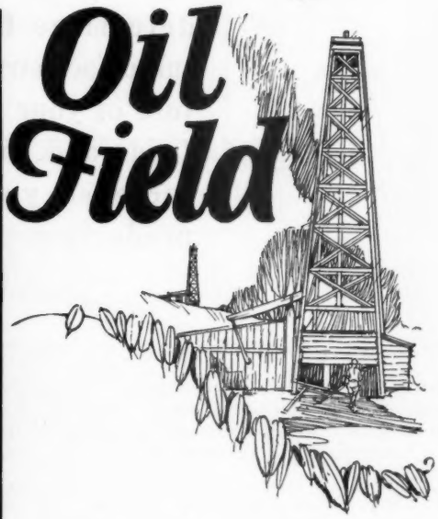

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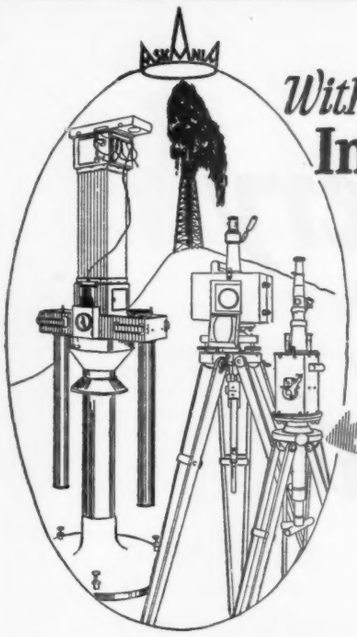

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closed at the end of each fiscal year, unless exceptional expense should be written off over the period determined by the extraordinary conditions involved.

5 CURRENT LIABILITIES

This classification shall include notes, acceptances and accounts payable, and accrued liabilities payable currently or within a reasonable time after the current accounting period.

The fiolowing sub-accounts shall be maintained:

6.0 Notes and Acceptances Payable
6.1 Accounts Payable
6.2 Notes and Acceptances Receivable Discounted
6.3 Accrued Liabilities
6.4 Other Current Liabilities.

6. CURRENT LIABILITIES—6.0 Notes and Acceptances Payable

This classification shall include promissory notes, trade acceptances issued to banks, trade creditors, officers, employes and other individuals or companies for money borrowed or accounts paybale.

The foloiwng sub-accounts shall be maintained:

6.00 Notes Payable
6.01 Trade Acceptances Payable.

6.0 Notes and Acceptances Payable—6.00 Notes Payable

To this account shall be credited promissory notes and renewals issued to banks, trade creditors, and other companies or individuals for money borrowed or accounts payable.

Coupon notes or notes maturing more than one year from date of the balance sheet shall be credited to the appropriate sub-account under Account 9, Long Term Indebtedness.

Interest accrued on notes payable shall be credited to Account 6.30, Accrued Interest Payable.

To this account shall be charged the amounts of payments made for reduction or retirement of such notes, and all renewals in whole or in part.

6.0 Notes and Acceptances Payable—6.01 Trade Acceptances Payable

To this account shall be credited trade acceptances and renewals issued in payment for materials or services.

Interest accrued on trade acceptances shall be credited to Account 6.30, Accrued Interest Payable.

To this account shall be charged the amounts of payments made for reduction or retirement of such acceptances and all renewals in whole or in part.

6 CURRENT LIABILITIES—6.1 Accounts Payable

This classification shall include amounts owed by the accounting company to trade creditors, officers and employes, when such liabilities are not covered by notes or other evidences of indebtedness.

The following sub-accounts shall be maintained:

6.10 Accounts Payable
6.11 Accrued Pay Roll
6.12 Other Accounts Payable.

6.1 Accounts Payable—6.10 Accounts Payable

To this account shall be credited amounts due to trade creditors and to other companies or individuals for materials, products or services.

To this account shall be charged all cash payments and promissory notes or trade acceptances issued to reduce or close such accounts payable.

To this account shall also be charged credit memoranda issued by trade creditors in adjustment of original charges.

6.1 Accounts Payable—6.11 Accrued Pay Roll

To this account shall be credited amounts due to officers and employes for services rendered.

To this account shall be charged all payroll checks issued to officers and employes, and amounts properly transferred to other accounts.

6.1 Accounts Payable—6.12 Other Accounts

To this account shall be credited all accounts payable not specifically provided for in Accounts 6.10 or 6.11.

At the option of the accounting company, a sub-account may be maintained under this classification in which to record unpresented checks.

When preparing balance sheets for publication, credit balances in Account 0.30 Customers' Accounts Receivable, shall be included in this Account.

To this account shall be charged all payments made, promissory notes, or acceptances issued, and adjustments made to reduce or close such Accounts Payable.

6 CURRENT LIABILITIES—6.2 Notes and Acceptances Receivable Discounted

This classification shall include acceptances or notes receivable discounted prior to maturity.

Discount on acceptances and notes receivable discounted shall be charged to the appropriate expense account.

The credit balance in this account shall be shown on the balance sheet as a deduction from Account 0.2 Notes and Acceptances Receivable, Account 0.40 Notes Receivable from Officers and Employes er Account 2.13 Notes Receivable from Affiliated Companies.

The following sub-accounts shall be maintained.

6.20 Acceptances Discounted
6.21 Notes Receivable Discounted.

6.2 Notes and Acceptances Receivable Discounted 6.20 Acceptances Receivable Discounted

To this account shall be credited the face value of acceptances receivable prior to maturity.

To this account shall be charged the amount of any payments made by the maker of such acceptances and concurrently credited to Account 0.30, Trade Acceptances Receivable.

To this account shall also be charged the amount of payments made by the accounting company to cover acceptances unpaid at maturity by makers.

6.2 Notes and Acceptances Receivable Discounted—6.21 Notes Receivable Discounted

To this account shall be credited the face value of notes receivable discounted prior to maturity.

To this account shall be charged the amount of any payments made by the maker of such notes and concurrently credited to Account 0.21, Customers' Notes Receivable; Account 0.22, Other Notes Receivable; Account, 0.40, Notes Receivable from Officers and Employes, or Account 2.13, Notes Receivable from Affiliated Companies.

To this account shall also be charged the amount of payments made by the accounting company to cover notes unpaid at maturity by makers.

6. CURRENT LIABILITIES—6.3 Accrued Liabilities

This classification shall include liabilities accrued to the date of the balance sheet, but payable thereafter.

The following sub-accounts shall be maintained:

6.30 Accrued Interest Payable
6.31 Accrued Rentals Payable
6.32 Accrued Taxes Payable
6.33 Accrued Insurance Payable
6.34 Accrued Royalties Payable
6.35 Other Accrued Liabilities.

6.3 Accrued Liabilities—6.30 Accrued Interest Payable

To This account shall be credited interest on bonds, notes, acceptances, and other accounts payable accumulating by the passage of time, but not payable until after the close of the current accounting period, the amounts of which may be exactly calculated.

To this account shall be charged the amounts of payments made, adjustments and transfers to other accounts.

6.3 Accrued Liabilities—6.31 Accrued Rentals Payable

To this account shall be credited rentals payable accumulating by the passage of time, but not payable until after the close of the current accounting period, the amounts of which may be exactly calculated.

To this account shall be charged the amounts of payments made, adjustments and transfers to other accounts.

6.3 Accrued Liabilities—6.32 Accrued Taxes Payable

To this account shall be credited taxes accumulating by the passage of time, but not payable until after the close of the current accounting period, the amounts of which may be exactly calculated.

To this account shall be charged the

LEGAL

DEPARTMENT OF THE INTERIOR
U. S. LAND OFFICE
Baton Rouge, Louisiana.

Notice is hereby given that the following described tracts in the Caddo oil field, Louisiana, are offered for oil and gas lease under Sec. 17 of the act of February 25, 1920 (41 Stat., 437), at the standard royalty fixed for departmental leases varying from 12½ to 33 1/3% of the oil produced, depending upon daily production per well, subject to reduction at discretion of lessor when average daily production of any well shall not exceed 10 barrels per day; and 12½ to 16 2/3% of casinghead gasoline and an annual rental of $1.00 per acre payable in advance which will be credited against royalties as they accrue for that year.

TRACT A: Lot 4, Sec. 5 (14.10 acres);
TRACT C: Lot 3, Sec. 5 (14.13 acres);
TRACT D: Lot 3, Sec. 4 (11.88 acres);
TRACT E: Lot 3, Sec. 3 and Lots 4 and 5, Sec. 4 (25.91 acres);
TRACT F: Lots 2 and 3, Sec. 8 (32.82 acres);
TRACT N: Frl. Sec. 20 (37.83 acres);
TRACT O: Lots 1 and 2, Sec. 32 (91.56 acres);
TRACT P: Lot 5, Sec. 32 (44.21 acres);
TRACT Q: Lot 1, Sec. 25 (8.90 acres);
TRACT R: Lot 1, Sec. 36 (9.12 acres);
TRACT S: Lot 2, Sec. 36 (4.69 acres).

All the above tracts are situated in T. 20 N., R. 16 W.

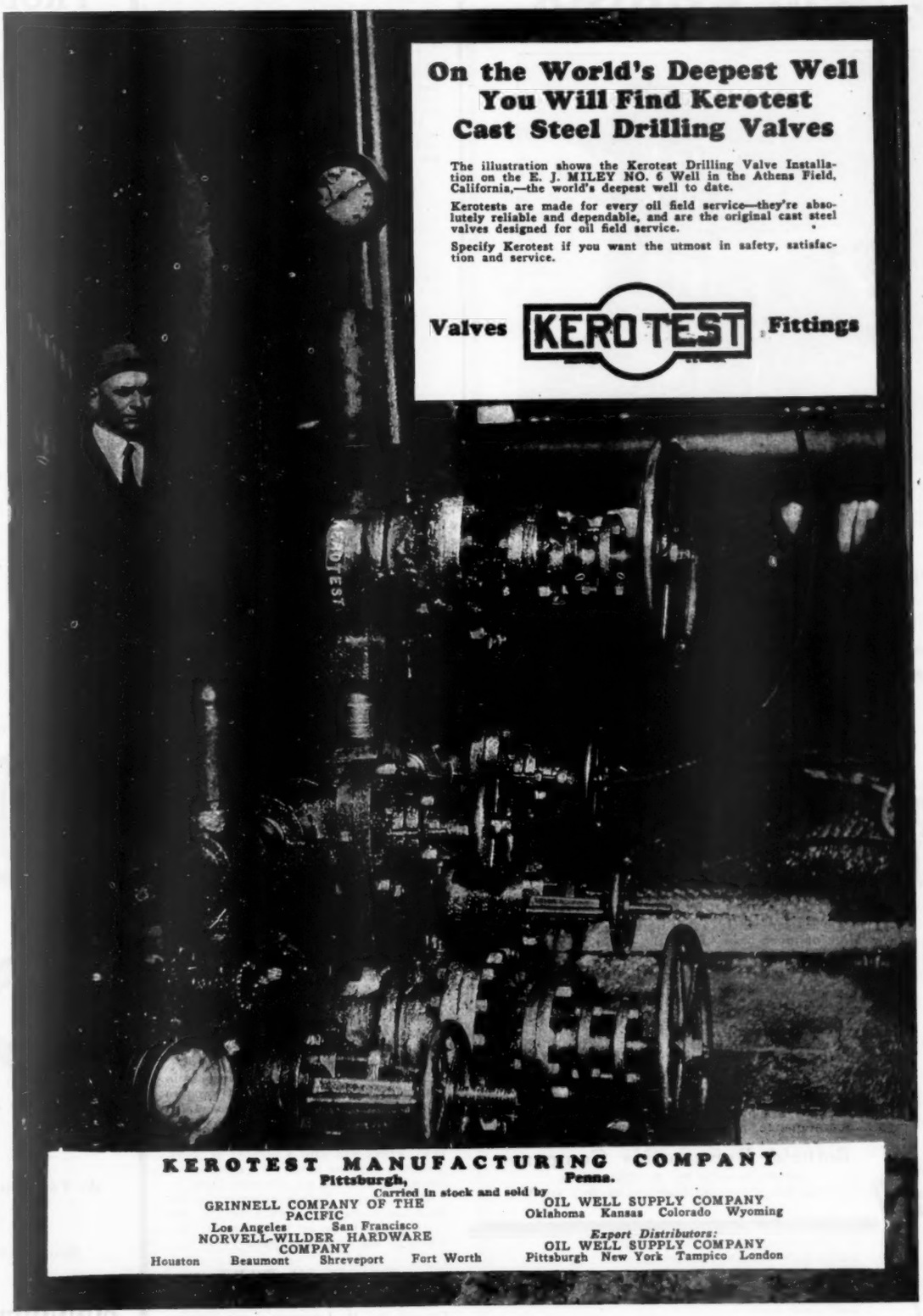
TRACT T: S½ NE¼ and W½ SE¼ Sec. 31 (160 acres) T. 20 N., R. 15 W.
TRACT U: SE¼ SE¼ Sec. 28 (39.98 acres), T. 22 N., R. 15 W.
TRACT V: SE¼ Sec. 9 (160.20 acres), T. 21 N., R. 16 W.

Said individual tracts will be offered at public auction at the Federal Court Room, Post Office Building, Shreveport, Louisiana, at 10 a. m. on April 21, 1926, and sold to the qualified bidder offering the highest bonus for lease of each tract at the stated royalty. One person, association or corporation may purchase not exceeding 640 acres. The successful bidder must deposit on day of sale a certified check upon a solvent bank, or cash, for one-fifth of the amount of each bid and file the showing of qualifications to receive a lease as required by Sec. 15 of Circular 672 oil and gas regulations, as to citizenship and ownership in other permits and leases. The remaining four-fifths of the bid must be paid prior to issuance of lease.

The bidders are warned against violation of the provisions of Sec. 59 of the U. S. Criminal Code approved March 4, 1909, prohibiting unlawful combination or intimidation of bidders.

The right is reserved to reject any or all bids in the discretion of the Secretary of the Interior.

GEORGE J. REILEY, Register.


On the World's Deepest Well
You Will Find Kerotest
Cast Steel Drilling Valves
The illustration shows the Kerotest Drilling Valve Installation on the E. J. MILEY NO. 6 Well in the Athens Field, California,—the world's deepest well to date.
Kerotests are made for every oil field service—they're absolutely reliable and dependable, and are the original cast steel valves designed for oil field service.
Specify Kerotest if you want the utmost in safety, satisfaction and service.
Valves
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Carried in stock and sold by
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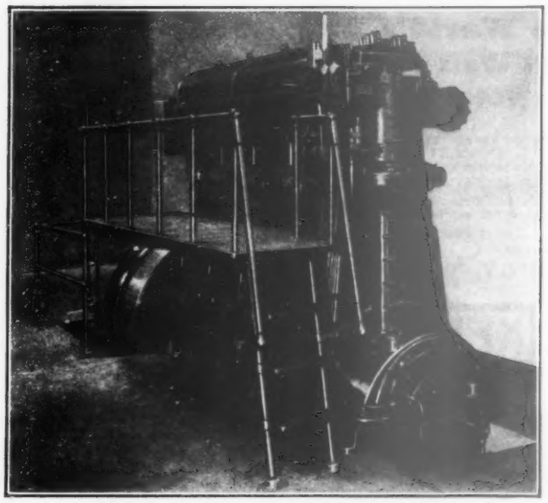
Oklahoma Kansas Colorado Wyoming
Export Distributors:
OIL WELL SUPPLY COMPANY
Pittsburgh New York Tampico London

THE FOOS
Diesel Engine



The four valve head design of the FOOS DIESEL makes room for complete water passage around each inlet and exhaust valve as well as around the fuel injection valve. Unquestionably longest cylinder head life will result from this safeguard against unequal straining of the cylinder head casting.

May we send you Bulletin G-704 describing this and other important construction features?

THE FOOS GAS ENGINE COMPANY
Springfield, Ohio
For 39 years Manufacturers of High-Quality Internal Combustion Engines exclusively. Types for all gas and liquid fuels.

Tripling Fire Brick Service In A Texas Refinery

IN oil stills and boiler furnaces at a Texas refinery, brickwork life formerly averaged only 15 months.

This same brickwork now averages a service of more than 45 months—a 300% increase in fire brick construction life!

There is a reason for this longer brickwork life—the Refinery Superintendent now specifies that fire brick be laid up with ADAMANT, the *original* high temperature fire brick cement.

A test convinced the Texas Refinery Superintendent that ADAMANT prolonged brickwork life and eliminated many relining jobs. If you would like to lengthen the life of *your* fire brick construction, and minimize maintenance, mail the coupon below.

Botfield Refractories Company
783 So. Swanson St., Philadelphia, Pa.
New York Office: 5th Floor, 110 W. 34th Street

Have You A Copy?

BOTFIELD REFRACTORIES CO.,
783 So. Swanson St., Philadelphia, Pa.

We'd like to find out if ADAMANT can help to prolong the life of our fire brick construction, and thus reduce repair costs.

You may also send us ..... copies of the new ADAMANT booklet, which contains suggestions for building longer-lived fire brick construction.

Name and Title .....

Company Name .....

Address .....

amounts of payments made, adjustments and transfers to other accounts.

6.3 Accrued Liabilities—6.33 Accrued Insurance Payable

To this account shall be credited premiums accumulating by the passage of time, but not payable until after the close of the current accounting period, the amounts of which may be exactly calculated.

To this account shall be charged the amounts of payments made, adjustments, and transfers to other accounts.

6.3 Accrued Liabilities—6.34 Accrued Royalties Payable

To this account shall be credited royalties payable (except oil royalties payable in kind) accumulating by the passage of time, but not payable until after the close of the current accounting period, the amounts of which may be exactly calculated.

To this account shall be charged the amounts of payments made, adjustments, and transfers to other accounts.

6.3 Accrued Liabilities—6.35 Other Accrued Liabilities

To this account shall be credited accrued liabilities not provided for in Accounts 6.30 to 6.34, inclusive, accumulating by the passage of time, but not payable until after the close of the current accounting period, the amounts of which may be exactly calculated.

To this account shall be charged the amounts of payments made, adjustments, and transfers to other accounts.

6. CURRENT LIABILITIES—6.4 Other Current Liabilities

This classification shall include all current liabilities not included in Accounts 6.0 to 6.3, inclusive, such as Dividends Declared, Matured Interest Coupons Unpaid, Unpresented Merchandist Coupons, and other current liabilities.

The following sub-accounts shall be maintained:

6.40 Dividends Declared
6.41 Matured Interest Coupons Unpaid
6.42 Unpresented Merchandise Coupons
6.43 Other Current Liabilities.

6.4 Other Current Liabilities—6.40 Dividends Payable

To this account shall be credited the amounts of dividends paid in cash.

6.4 Other Current Liabilities—6.41 Matured Interest Coupons Unpaid

To this account shall be credited at maturity interest due on coupon bond or notes concurrently charged to Account 6.30, Accrued Interest Payable.

To this account shall be charged the amounts paid to redeem such coupons.

6.4 Other Current Liabilities—6.42 Unpresented Merchandise Coupons

To this account shall be credited the gross value of merchandise sold to customers.

Where merchandise coupons are sold at a discount, the amount of the discount shall be charged to an appropriate expense account.

To this account shall be charged the gross value of merchandise coupons received in exchange for products or otherwise redeemed or canceled.

6.4 Other Current Liabilities—6.43 Other Current Liabilities

To this account shall be credited current liabilities of any character not included in Accounts 6.00 to 6.42, inclusive.

To this account shall be charged the amount of payments made to reduce or liquidate such liabilities, adjustments, or transfers to other accounts.

(To Be Continued)

DUKE OIL PROPERTY AT DUKE CENTER SOLD

BOLIVAR, N. Y., Mar. 20.—M. B. Moore and son, R. B. Moore, the former's son-in-law, Douglas Repp, and Harry Metzgar, of Bolivar, have purchased the Duke estate oil property at Duke Center, Pa., from Charles Duke of that place and Winfield Duke of Warren, Pa. The consideration was private. Oil property in this field has been selling at from $1,000 to $1,500 an acre.

The property consists of 185 acres in fee, with 12 wells which will produce about 5 bbls. a day. It is from 1,200 to 1,600-foot drilling, the Bradford sand ranging from 18 to 35 feet in depth. The new owners will drill a number of wells. The property has never been flooded, but there is a flood on an adjoining lease.

R. B. Moore, district manager for the Reid Gas Engine Co. of Oil City, Pa., will erect a warehouse at Duke Center, Pa., where he will handle supplies.

BELGIAN OIL POLICY

A lecture was recently delivered at Brussels by M. Lepoutre, general secretary of the Belgian Commission des Carburants, who insisted upon the necessity of devising and steadily pursuing a national policy in the matter of liquid fuels. He advocated grouping in one central organization all branches dealing with questions in relation to national supply of liquid fuels.

CUNNINGHAM PRODUCTS

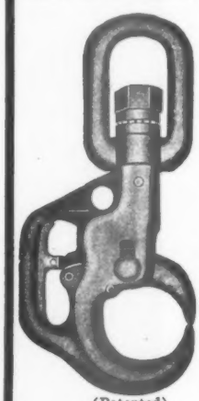
PROVEN IN EVERY FIELD

An Elevator that is safe to operate, quick in action and strong in construction. Serves as a wrench while locked on rods. Will not release of its own accord.

(Patented)

POSITIVELY WILL NOT KINK RODS

Take no chances, use a Safety Sucker Rod Hook that is safe. The Latch is sure, strong and certain, will not release until released by operator.



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Manufactured by

CUNNINGHAM CO.
212 S. Norfolk
Tulsa, Oklahoma

SCHEDULE OF LANDS, OSAGE RESERVATION, OKLAHOMA

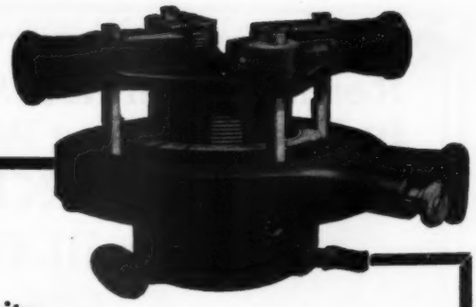
Offered and Sold at Public Auction March 17 and 18, 1926, Under Departmental Regulations Approved March 7, 1923, for the Mining of Oil, Showing Description of Land, Bonus Offered and Name of Purchaser

FIRST DAY, MARCH 17

East Side

Tract Number		Description	Acreage	Bonus	Purchaser—
1		NW 29-20-12	160	$ 900	Benjamin C. Conner et al, Tulsa.
2		SE 30-20-12	160	300	James A. Kennedy, Tulsa.
3		NW 19-21-12	160	300	Kewanee Oil & Gas Co., Tulsa.
4		NE 5-22-12	160	300	T. K. Smith, Tulsa.
5		SE 7-22-12	160		Passed.
6		NW 21-27-12	160	300	John W. Dyson, Electra, Tex.
7		NE 33-28-12	160		Passed.
8		NW 19-29-12	160	1,100	T. O. Lilystrand, Tulsa.
9		SW 30-29-12	160	300	A. D. Simon, Caney, Kans.
10		SW 3-20-11	160	300	C. W. Grimes and P. E. Elliott.
11		SW 24-20-11	160	700	J. M. Allen, R. E. Garrett, 902 Pet. Bldg.
12		SW 26-20-11	160	300	Devonian Oil Co.
13		NE 33-20-11	160	300	Sand Springs Home
14	Fr.	SE 33-20-11	102.81	300	Sand Springs Home
15		NW 35-20-11	160	300	Devonian Oil Co.
16	Fr.	SE 35-20-11	107.46	300	Devonian Oil Co.
17	Fr.	SW 35-20-11	107.28	300	Devonian Oil Co.
18		NE 10-21-11	160	300	Grimes & Elliott, Tulsa.
19		SE 10-21-11	160		Passed.
20		SE 23-21-11	160	300	Devonian et al.
21		SE 24-21-11	160	1,400	Kewanee Oil & Gas Co., Tulsa.
22		NE 26-21-11	160	2,000	John Essley, Tulsa.
23		NE 32-21-11	160		Passed.
24		NE 34-21-11	160	400	John Essley, Tulsa.
25		NW 34-21-11	160	400	John Essley, Tulsa.
26		NE 1-22-11	160		Passed.
27		SE 1-22-11	160		Passed.
28		SE 14-22-11	160	600	J. H. Winemiller, Tulsa.
29		SW 14-22-11	160	600	J. H. Winemiller, Tulsa.
30		SW 23-22-11	160	500	Ray Branstetter, Skiatook.
31		NW 26-22-11	160	1,300	Ray Branstetter, Skiatook.
32		SE 28-22-11	160	300	Devonian et al.
33		NE 33-22-11	160	3,100	Devonian Oil Co., Tulsa.
34		NE 31-24-11	160		Passed.
35		NW 5-25-11	160		Passed.
36		SW 5-25-11	160		Passed.
37		NE 6-25-11	160		Passed.
38		SE 6-25-11	160		Passed.
39		NW 35-25-11	160	300	Devonian et al, Tulsa.
40		SW 35-25-11	160	300	Devonian et al, Tulsa.
41		NE 35-26-11	160	300	Phillips Petroleum Co., Bartlesville.
42		NW 35-26-11	160		Passed.
43		SE 35-26-11	160	300	Phillips Petroleum Co.
44		SW 35-26-11	160	300	Phillips Petroleum Co.
45		NW 10-27-11	160	600	C. O. Ross, Coffeyville, Kans.
46		SW 10-27-11	160	1,000	C. O. Ross, Coffeyville.
47		NW 15-27-11	160	1,000	C. O. Ross, Coffeyville.
48		NW 21-27-11	160		Passed.
49		NE 10-28-11	160	300	New England Oil & Pipe Line Co.
50		NW 11-28-11	160	1,500	New England Oil & Pipe Line Co.
51		NW 13-28-11	160	300	Indian Territory Illuminating Oil Co.
52		SE 26-28-11	160		Passed.
53		NW 28-28-11	160		Passed.
54		SW 30-28-11	160	300	C. O. Ross, Coffeyville.
55		NW 31-28-11	160	300	C. O. Ross, Coffeyville.
56		NE 35-28-11	160		Passed.
57		NE 24-29-11	160	1,100	T. O. Lilystrand, Tulsa.
58		SE 25-29-11	160	300	A. D. Simon, Caney.
59		NE 2-20-10	160	300	Grimes & Elliott, Tulsa.
60		SE 2-20-10	160	300	J. A. Kennedy, Tulsa.
61		SE 5-20-10	160	900	J. H. McElroy, Tulsa.
62		SE 9-20-10	160		Passed.
63		NW 10-20-10	160	600	Sand Springs Home.
64		NE 23-20-10	160	300	Sand Springs Home.
65		SE 23-20-10	160	300	Sand Springs Home.
66		NE 28-20-10	160	2,800	Blackwell Oil & Gas Co., Blackwell.
67		SE 28-20-10	160	300	D. F. Millard, Pawhuska.
68	Fr.	SE 32-20-10	89.35	3,900	Glied Oil Co. and Midco Oil Corp.
69		SE 10-21-10	160	6,200	Mid-Kansas Oil & Gas Co.
70		SW 29-21-10	160		Passed.
71		SE 30-21-10	160		Passed.
72		NE 31-21-10	160		Passed.
73		NE 36-21-10	160		Passed.
74		NW 36-21-10	160		Passed.
75		NW 5-23-10	160		Passed.
76		SW 5-23-10	160		Passed.
77		SE 11-23-10	160	500	Ray Branstetter, Skiatook.
78		SW 17-23-10	160	300	New England Oil & Pipe Line Co.
79		NE 18-23-10	160		Passed.
80		NW 18-23-10	160		Passed.
81		NW 29-23-10	160		Passed.
82		NE 32-23-10	160	300	Superior Oil Corp., Tulsa.
83		NW 32-23-10	160	300	Union Oil & Mining Co., Tulsa.
84		SW 13-26-10	160	6,800	Amerada Petroleum Corp., Tulsa.
85		SE 14-26-10	160	2,200	Phillips Petroleum Co.
86		NE 15-26-10	160		Passed.
87		NW 15-26-10	160		Passed.
88		SW 15-26-10	160		Passed.
89		SW 20-26-10	160	300	R. E. Seamans, Pawhuska.
90		NE 23-26-10	160	2,400	Phillips Petroleum Co.
91		NE 28-26-10	160		Passed.
92		NW 28-26-10	160		Passed.
93		SW 28-26-10	160		Passed.
94		NW 29-26-10	160		Passed.
95		SW 30-26-10	160	900	The Texas Co.
96		NE 3-28-10	160	1,200	M. F. Breene, 1018 Kennedy Bldg., Tulsa.
97		NE 15-28-10	160	300	R. E. Seamans, Pawhuska.
98		SW 15-28-10	160	1,100	Winona Oil Co.
99		NE 18-28-10	160		Passed.
100		NW 20-28-10	160		Passed.
101		SW 20-28-10	160		Passed.
102		NW 28-28-10	160		Passed.
103		NE 31-28-10	160		Passed.
104		NW 32-28-10	160		Passed.
105		SW 32-28-10	160		Passed.
106		NE 14-29-10	160	300	R. E. Seamans, Pawhuska.
107		SE 14-29-10	160	300	R. E. Seamans, Pawhuska.
108		NW 15-29-10	160	300	Blackwell Oil & Gas Co., Blackwell.
109		SW 15-29-10	160	300	R. E. Seamans, Pawhuska.
110		NE 19-29-10	160		Passed.
111		NW 19-29-10	160		Passed.
112		SE 27-29-10	160	800	R. E. Seamans, Pawhuska.
113		NW 28-29-10	160		Passed.
114		NE 31-29-10	160		Passed.
115		NW 31-29-10	160		Passed.
116		NE 1-20- 9	160		Passed.
117		SE 1-20- 9	160	300	John Essley, Tulsa.
118		NE 2-20- 9	160		Passed.
119		NW 2-20- 9	160		Passed.
120	Fr.	NE 12-20 9	54	100	John Essley, Tulsa.
121		SW 3-21- 9	160	700	Ohio-Osage Oil Co.
122		NE 5-21- 9	160		Passed.
123		SW 5-21- 9	160	300	A. J. Wright, Cleveland.
124		SE 8-21- 9	160	300	A. G. Oliphant.
125		NE 15-21- 9	160	1,100	Phillips Petroleum Co.
126		NW 16-21- 9	160	300	Ohio-Osage Oil Co.
127		SE 16-21- 9	160	300	Ohio-Osage Oil Co.
128		SW 16-21- 9	160	300	Ohio-Osage Oil Co.
129		NE 21-21- 9	160	1,700	A. G. Oliphant.
130		NW 21-21- 9	160	600	Ohio-Osage Oil Co.
131		NE 23-21- 9	160		Passed.
132		NW 25-21- 9	160	300	Devonian Oil Co.
133		SE 33-21- 9	160	300	Devonian Oil Co.
134		SW 33-21- 9	160	300	Devonian Oil Co.
135		NE 36-21- 9	160		Passed.
136		SE 36-21- 9	160		Passed.
137		SW 31-22- 9	160	400	A. G. Oliphant and C. B. Peters.
138		NW 12-23- 9	160	300	A. G. Oliphant and C. B. Peters.
139		NW 14-23- 9	160		Passed.
140		SW 18-23- 9	160	2,100	Reiter-Foster Oil Corp.
141		SE 22-23- 9	160	1,000	R. E. Seamans.
142		SW 23-23- 9	160	300	R. E. Seamans.

(Continued on Page 108)



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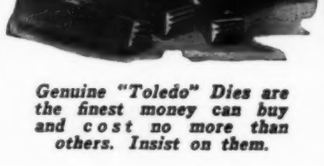
Day after day, year after year, always doing its work even under the most severe conditions — a "TOLEDO" tool shows its superior qualities in actual service.

No polished parts, no fancy adjustments, but strong where strength is needed, and with a perfect mechanical principle—a genuine "TOLEDO" tool is the last word in pipe tool efficiency.

There is no better tool made for threading 1" to 2" pipe than this "TOLEDO" No. 1A ratchet tool.



Genuine "Toledo" Dies are the finest money can buy and cost no more than others. Insist on them.

Buy By Comparison and You'll Buy a

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THE TOLEDO PIPE THREADING MACHINE CO. Toledo, Ohio

NEW YORK OFFICE, 72 LAFAYETTE ST.

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FOR ALL PURPOSES FOR

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Substantial additions to our fleet have just been necessary in order to keep pace with the demands of our growing business.

Quick Service to All Points

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BAKER CASING SHOE CO.

Remove Derrick Strain In Deep Drilling With the

BAKER Drill-Pipe Float

The effective back pressure valve with a generous, unobstructed opening that affords free passage for fluid and ensures perfect circulation.

It means double life for wire lines and brake bands. Ask users.

A safety device which prevents accidents and damage from parting of drill pipe.

Inserted between tool joints and is easily inspected.

Unequalled for deep drilling. Relieves excessive strain on derrick and other equipment.

Built of high grade steel, strong and tough. Full details in special folder, free.

Mid-Continent Representatives: B & A Specialty Company, 404 W. First St., Tulsa, Okla.

BAKER CASING SHOE COMPANY

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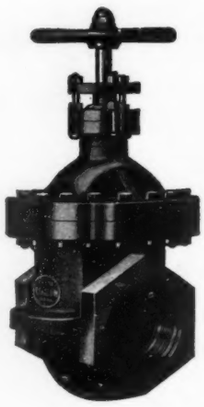
Huntington Park, Calif. Coalinga, Calif.
George J. Hausen, Representative, Taft, Calif.

Always Dependable



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Good, faithful, dependable products that do all we claim they will and more. Let our nearest office tell you the LUDLOW story.

THE LUDLOW VALVE MFG. CO.

(Established 1866)

Factory: Troy, N. Y.

Branch Offices:
Kansas City, Mo.; Chicago, Ill.; Pittsburgh, Pa.; Boston, Mass.

28

Oil Worker's Wife And 4 Children Die When Home is Burned

BRADFORD, Pa., Mar. 20.—Five members of the family of Samuel Towner, field employe of the South Penn Oil Co. were burned to death, and Towner and two children were seriously burned when fire destroyed the Towner home at Simpson, in the heart of the Bradford Field.

Mr. and Mrs. Towner and six of their eight children were asleep in the house when the parents were awakened by flames and smoke. They found escape cut off by all other means than a window. Towner dropped to the ground from this window, breaking his arm in the fall, and his wife began to drop the children down to him. Two of them were passed down in this way when the mother must have been overcome and she and the four remaining little ones met death. The two children who were dropped out of the window had been severely burned and they and the father were removed to the Bradford hospital. Two Towner children were away from home when the catasirophe occurred.

KENTUCKY-TENNESSEE

(Continued from Page 86)

Mine Fork. Crossing the Dome, after leaving the gas field on the northwest flank, one goes immediately into the oil fields of Magoffin County. These fields have extended south, crossing the headwaters of Mine Fork, State Road Fork, Mash Fork and Burning Fork to Burton Fork, where a great deal of work will be done in the near future.

With the Berea Field, covering as it does the whole central area of Johnson County, along with the North and South Weir Fields of Lawrence-Johnson and Magoffin Counties making the wonderful showings they are, it seems that the oil business of that whole region is destined to attain wonderful proportions.

But five wells were reported completed from the Eastern division. In the North Weir Field, of Lawrence-Johnson Counties, the Swiss Oil Corp's. No. 13 on the C. E. Fraley lease, in District 22, is reported at 7 bbls. from the Weir sand.

In District 31, South Weir Field, of Johnson-Magoffin Counties, the Elkhorn Coal Co. and others' second well on the Jesse Adams No. 2 lease, is reported at 3 bbls. and the Red Rock Petroleum Co's. No. 3 W. E. Patrick lease, at 5 bbls.

In the Fitchburg area, District 7, of the Irvine Field of Estill County, the Mountain Springs Oil Co's Nos. 11 and 12 John Rogers are estimated at 5 and 2 bbls. respectively.

Florida Test

Word comes from Monticello, Fla., that a deep test is to be drilled near that city in Jefferson County, by the Southern States Oil Corp. This company, recently formed, is a Florida corporation. The directors are: T. F. Bray, president, of Camden, Ark.; Louis Ehlert, first vice president, of Milwaukee, Wis.; W. J. Jordan, second vice president, of Saratoga, Texas; Charles J. Greene, secretary, of Dallas, Texas, and D. H. Gilbert, treasurer, of Monticello, Fla.

This company is said to have approximately 100,000 acres under lease in Florida at the present time on three different structures. The first well is now drilling on what is known as the Monticello Dome 2½ miles northeast of Monticello. It is reported in a hard lime formation at about 200 feet. A combination rig is being used. It is the intention to drill to anywhere from 2,650 to 4,000 feet and to test all favorable looking sands. Fifteen-inch surface casing has been set at 110 feet.

DIESEL ENGINE FUEL

According to A. J. Wilsen, who writes on the subject in the Fuel Economist, the Diesel engine should be developed to the greatest possible point of adaptability to meet a wide range of fuels since the prospects for a standardized fuel for such engines is exceedingly remote.

PARKERSBURG MACHINE CO. PARMACO PARKERSBURG, W. VA. U.S.A.

PARMACO

Low Pressure Gas Boiler Burners

PARMACO

Casing Wagons

PARMACO

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PARKERSBURG MACHINE CO.

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Perfect in construction, absolutely dependable in action, husky in service, and extremely easy in operation.

Exclusive Features?

Yes, for years, and more are constantly being added. Other hoists have some, too—

But Still it Leads

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MANUFACTURING COMPANY
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AND THE BEST JOBBERS CAN SUPPLY YOU

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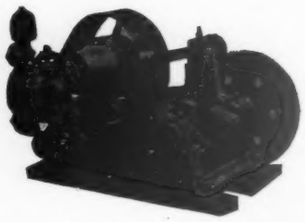

Lucey Manufacturing Corporation, Chattanooga, Tenn., writes:

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25 Broad Street New York, N. Y.

SCHEDULE OF LANDS, OSAGE RESERVATION, OKLAHOMA

(Continued from Page 105)

Tract Number	Description	Acreage	Bonus	Purchaser—
143	NE 24-23- 9	160		Passed.
144	SE 24-23- 9	160		Passed.
145	NE 28-23- 9	160	300	Indian Territory Illuminating Oil Co.
146	SE 35-23- 9	160		Passed.
147	SW 35-23- 9	160		Passed.
148	SW 6-24- 9	160		Passed.
149	NW 7-24- 9	160		Passed.
150	SW 7-24- 9	160	300	A. V. Jackson, Cincinnati.
151	SE 10-24- 9	160		Passed.
152	SW 10-24- 9	160		Passed.
153	NW 17-24- 9	160	1,300	A. G. Oliphant and C. B. Peters.
154 Fr.	NW SW 17-24- 9	40	3,800	Ernest McCarty, Wynona.
155	SE 18-24- 9	160	2,900	Ernest McCarty, Wynona.
156	SW 32-24- 9	160	4,100	A. G. Oliphant and C. B. Peters.
157	SW 2-25- 9	160	300	Garnet Oil Co., Winfield.
158	SE 3-25- 9	160	300	Garnet Oil Co., Winfield.
159	SW 8-25- 9	160	800	A. G. Oliphant, Tulsa.
160	NE 20-25- 9	160	300	A. M. Landon, Independence.
161	SW 22-25- 9	160		Passed.
162	NE 27-25- 9	160		Passed.
163	NW 30-25- 9	160	2,000	New England Oil & Pipe Line Co., Tulsa.
164	SW 30-25- 9	160		Passed.
165	SE 31-25- 9	160	3,000	Barnsdall Oil Co., Tulsa.
166	SW 31-25- 9	160	1,400	Indian Territory Illuminating Oil Co.
167	NE 9-26- 9	160		Passed.
168	NW 9-26- 9	160		Passed.
169	NE 17-26- 9	160		Passed.
170	NW 17-26- 9	160		Passed.
171	SE 20-26- 9	160		Passed.
172	SW 21-26- 9	160		Passed.
173	NW 26-26- 9	160		Passed.
174	SW 30-26- 9	160		Passed.
175	NW 31-26- 9	160		Passed.
176	SE 32-26- 9	160		Passed.
177	SE 3-27- 9	160		Passed.
178	NE 13-27- 9	160		Passed.
179	NE 15-27- 9	160		Passed.
180	NW 18-27- 9	160	300	Indian Territory Illuminating Oil Co.
181	SW 19-27- 9	160		Passed.
182	NE 24-27- 9	160		Passed.
183	SW 25-27- 9	160		Passed.
184	NW 33-27- 9	160		Passed.
185	SW 33-27- 9	160		Passed.
186	NE 34-27- 9	160		Passed.
187	SE 1-28- 9	160		Passed.
188	SE 2-28- 9	160		Passed.
189	NE 4-28- 9	160		Passed.
190	NE 6-28- 9	160		Passed.
191	NW 21-28- 9	160		Passed.
192	NE 26-28- 9	160		Passed.
193	SW 32-28- 9	160		Passed.
194	NE 34-28- 9	160		Passed.
195	NW 34-28- 9	160		Passed.
196	NE 21-29- 9	160	2,000	Wah-Sha-She Oil Co., Bartlesville.
197	NE 25-29- 9	160		Passed.
198	SW 25-29- 9	160		Passed.
199	NE 1-21- 8	160	300	A. V. Jackson, 3247 Lynnwood Road, Cin-
200	NE 8-22- 8	160		Passed. [cinnati, Ohio.
201	NW 9-22- 8	160		Passed.
202	SE 16-22- 8	160		Passed.
203	SW 17-22- 8	160		Passed.
204	NE 18-22- 8	160	300	Peters Petroleum Corp., Tulsa.
205	NE 21-22- 8	160		Passed.
206	SE 35-22- 8	160	20,500	Skelly Oil Co. and Oklavania Oil Co.
207	SW 35-22- 8	160	4,000	Skelly Oil Co. and Oklavania Oil Co.
208	SW 36-22- 8	160	28,000	Mid-Kansas Oil & Gas Co.
209	NE 21-23- 8	160	2,800	Barnsdall Oil Co., Tulsa.
210	SE 21-23- 8	160	4,100	Beacon Oil Co., Bartlesville.
211	NE 22-23- 8	160	500	Barnsdall Oil Co., Tulsa.
212	SE 22-23- 8	160	300	Barnsdall Oil Co., Tulsa.
213	SE 35-23- 8	160		Passed.
214	SW 35-23- 8	160		Passed.
215	SW 5-24- 8	160	17,000	Amerada Petroleum Corp., Tulsa.
216	SW 12-24- 8	160	4,500	The Texas Co.
217	NW 27-24- 8	160		Passed.
218	SW 27-24- 8	160		Passed.
219	NE 8-25- 8	160		Passed.
220	NE 10-25- 8	160	6,600	Wrightsman Petroleum Co., Tulsa.
221	NW 10-25- 8	160	1,500	Wrightsman Petroleum Co., Tulsa.
222	NW 13-25- 8	160		Passed.
223	NE 16-25- 8	160	300	A. G. Oliphant, Tulsa.
224	NW 16-25- 8	160	300	A. G. Oliphant, Tulsa.
225	NW 27-25- 8	160	300	A. V. Jackson, Cincinnati, Ohio.
226	NE 28-25- 8	160		Passed.
227	SW 29-25- 8	160	37,000	The Texas Co.
228	NE 30-25- 8	160	29,000	Lewis Oil Co., Tulsa.
229	SE 2-26- 8	160		Passed.
230	SW 2-26- 8	160		Passed.
231	NE 3-26- 8	160		Passed.
232	SW 3-26- 8	160		Passed.
233	SE 5-26- 8	160		Passed.
234	NW 6-26- 8	160		Passed.
235	NW 8-26- 8	160		Passed.
236	NW 13-26- 8	160	2,100	A. G. Oliphant, Tulsa.
237	SW 13-26- 8	160	300	Pat Henry and M. O. Stevenson, Pawhuska.
238	SW 17-26- 8	160		Passed.
239	NW 19-26- 8	160		Passed.
240	NW 22-26- 8	160		Passed.
241	SW 22-26- 8	160		Passed.
242	NE 23-26- 8	160	300	Petroleum Drilling Co., Pawhuska.
243	NE 25-26- 8	160		Passed.
244	SW 25-26- 8	160	300	Petroleum Drilling Co., Pawhuska.
245	NE 28-26- 8	160		Passed.
246	SE 29-26- 8	160		Passed.
247	NE 31-26- 8	160	300	New England Oil & Pipe Line Co.
248	SW 31-26- 8	160	300	New England Oil & Pipe Line Co.
249	NE 1-27- 8	160		Passed.
250	NE 3-27- 8	160		Passed.
251	SE 3-27- 8	160		Passed.
252	NE 9-27- 8	160		Passed.
253	SW 10-27- 8	160		Passed.
254	SE 12-27- 8	160		Passed.
255	NW 13-27- 8	160		Passed.
256	SW 13-27- 8	160		Passed.
257	NE 16-27- 8	160		Passed.
258	SE 20-27- 8	160		Passed.
259	SW 20-27- 8	160		Passed.
260	SE 22-27- 8	160		Passed.
261	NW 25-27- 8	160		Passed.
262	SW 26-27- 8	160		Passed.
263	NE 27-27- 8	160		Passed.
264	NW 28-27- 8	160		Passed.
265	SW 28-27- 8	160		Passed.
266	NE 31-27- 8	160		Passed.
267	SW 31-27- 8	160		Passed.
268	SE 33-27- 8	160		Passed.
269	NE 34-27- 8	160		Passed.
270	SE 34-27- 8	160		Passed.
271	SE 35-27- 8	160		Passed.
272	NE 36-27- 8	160		Passed.
273	SE 3-28- 8	160	300	Beacon Oil Co., Bartlesville.
274	SE 4-28- 8	160		Passed.
275	SW 5-28- 8	160		Passed.
276	SE 6-28- 8	160		Passed.
277	SW 7-28- 8	160		Passed.
278	SW 8-28- 8	160		Passed.
279	NE 9-28- 8	160		Passed.
280	NW 9-28- 8	160		Passed.
281	SW 10-28- 8	160		Passed.
282	NW 12-28- 8	160		Passed.
283	NE 14-28- 8	160		Passed.
284	SW 14-28- 8	160		Passed.
285	NW 16-28- 8	160	800	Beacon Oil and Indian Ter. Illum. Oil. Co.
286	SE 18-28- 8	160	300	Superior Oil Corp., Tulsa.
287	NW 20-28- 8	160	1,200	Superior Oil Corp., Tulsa.
288	SW 22-28- 8	160		Passed.
289	SE 23-28- 8	160		Passed.

Here are four "U. S." Packings built for refinery service—

F.O.P. Asbestos Fibre Oil-Proof Sheet Packing

Recommended for flanges on hot oil, cold oil, benzine, naphtha, gasoline, mineral seal oil, high or low pressure saturated or super-heated steam. It has no equal for high pressure cracking still head gaskets. Will not soften in hot oil at any temperature. The best sheet packing for all types of gaskets on gas or oil engines, compressors, or extreme dry heat conditions.
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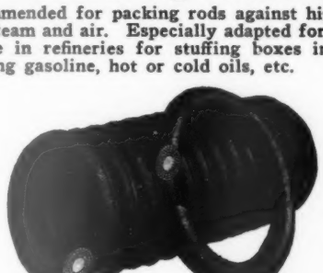
Recommended for packing rods against high pressure steam and air. Especially adapted for general service in refineries for stuffing boxes in pumps handling gasoline, hot or cold oils, etc.



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Back in the days before Cushing and Burkburnett came in—long before the refineries that followed these fields were thought of—the packing experts of the United States Rubber Company were analyzing the operating problems of the refiner.

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Refinery records show that "U.S." Packings *do* make a difference.

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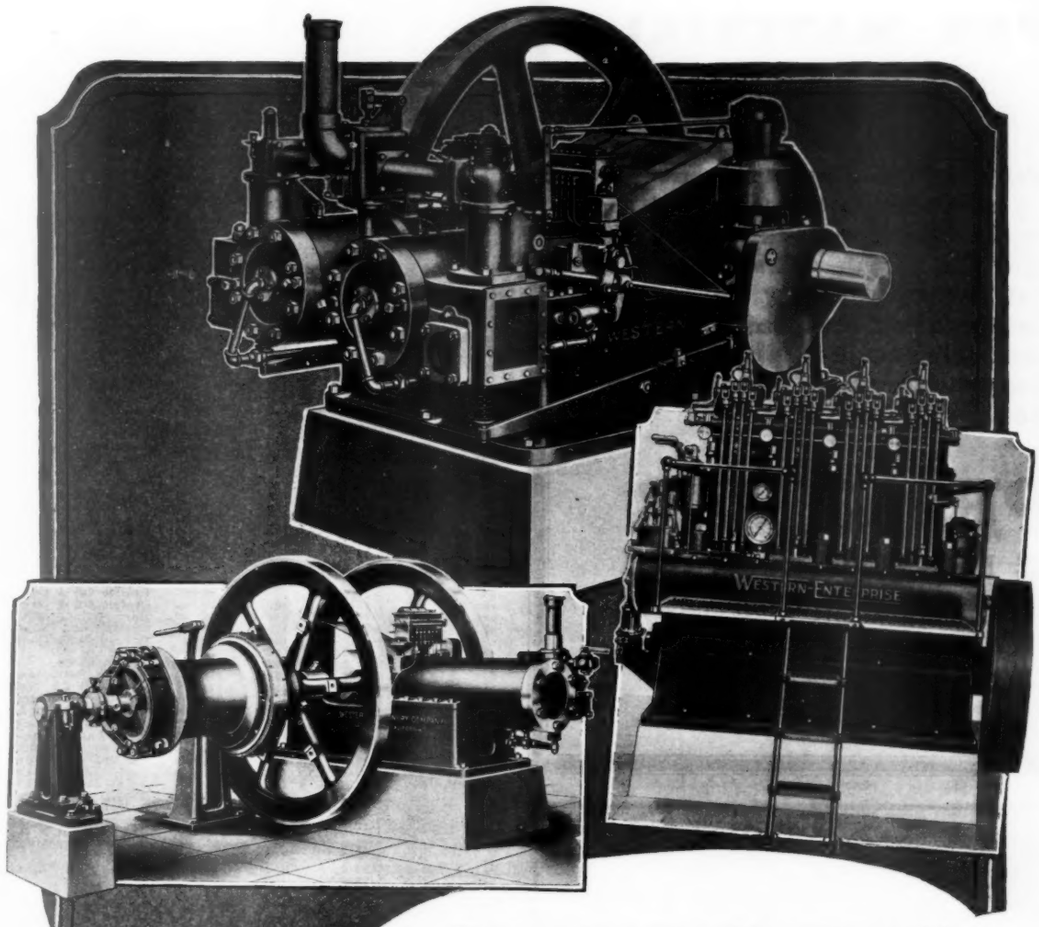
KANSAS CITY MO.
TULSA REPRESENTATIVE, A. N. PORTER, 308 S. OLYMPIA ST.

Tract Number	Description	Acreage	Bonus	Purchaser—
290	NW 24-28- 8	160		Passed.
291	NE 25-28- 8	160		Passed.
292	SW 25-28- 8	160		Passed.
293	SW 26-28- 8	160		Passed.
294	NW 27-28- 8	160		Passed.
295	SW 29-28- 8	160		Passed.
296	NW 20-28- 8	160		Passed.
297	NW 33-28- 8	160		Passed.
298	SW 33-28- 8	160		Passed.
299	SE 35-28- 8	160		Passed.
300	NE 36-28- 8	160		Passed.
301	NW 16-29- 8	160		Passed.
302	NW 17-29- 8	160		Passed.
303	SE 17-29- 8	160		Passed.
304	SE 20-29- 8	160		Passed.
305	SE 21-29- 8	160		Passed.
306	NE 22-29- 8	160		Passed.
307	SE 23-29- 8	160		Passed.
308	NW 25-29- 8	160		Passed.
309	SE 25-29- 8	160		Passed.
310	NW 26-29- 9	160		Passed.
311	SE 26-29- 8	160		Passed.
312	SE 28-29- 8	160		Passed.
313	SW 29-29- 8	160		Passed.
314	SE 30-29- 8	160		Passed.
315	SE 31-29- 8	160		Passed.
316	NE 32-29- 8	160		Passed.
317	SW 33-29- 8	160		Passed.
318	SE 35-29- 8	160		Passed.

West Side
SECOND DAY, MARCH 18

Tract Number	Description	Acreage	Bonus	Purchaser—
319	NE 4-21-7	160		Passed.
320	NW 4-21-7	160	$ 300	Gypsy Oil Co., Tulsa.
321	SE 4-21-7	160		Passed.
322	SW 4-21-7	160		Passed.
323 Fr.	NE 5-21-7	64		Passed.
324 Fr.	SE 5-21-7	65.60		Passed
325	NE 11-21-7	160	300	Gypsy Oil Co., Tulsa.
326	NW 11-21-7	160	300	Gypsy Oil Co., Tulsa.
327	SE 11-21-7	160	9,100	Gypsy Oil Co.
328	SW 11-21-7	160	15,500	Gypsy Oil Co.
329 Fr.	NW 14-21-7	90.40	2,200	Marland Oil Co.
330 Fr.	NW 16-21-7	113.50	2,800	Marland Oil Co.
331	NW 5-22-7	160	300	Western American Oil Co.
332	SW 5-22-7	160	300	Western American Oil Co.
333	NE 6-22-7	160	500	Indian Territory Illuminating Oil Co.
334	SE 6-22-7	160	700	C. F. Lake et al, Pawhuska.
335	NE 11-22-7	160		Passed.
336	NW 11-22-7	160		Passed.
337	SE 11-27-7	160		Passed.
338 Fr.	SW 11-22-7	86.50		Passed.
339	NW 17-22-7	160		Passed.
340	SW 17-22-7	160		Passed.
341 Fr.	NW 20-22-7	35		Passed.
342	NE 35-22-7	160		Passed.
343	NW 35-22-7	160		Passed.
344	SE 35-22-7	160		Passed.
345	SW 35-22-7	160		Passed.
346	NE 5-23-7	160	1,500	Sinclair Oil & Gas Co.
347	NW 5-23-7	160	1,500	Sinclair Oil & Gas Co.
348	SE 5-23-7	160	2,500	Indian Territory Illuminating Oil Co.
349	SW 5-23-7	160	3,600	Phillips Petroleum Co.
350	NE 19-23-7	160	2,200	Phillips Petroleum Co.
351	NW 19-23-7	160	2,100	Indian Territory Illuminating Oil Co.
352	SE 19-23-7	160	1,200	A. G. Oliphant and Peters Petroleum Co.
353	SW 19-23-7	160	1,800	Skelly Oil Co.
354	NE 33-23-7	160	300	Savoy Oil Co., Box 1993, Tulsa.
355	SE 33-23-7	160	500	Savoy Oil Co., Box 1993, Tulsa.
356	NW 34-23-7	160	800	Wrightsman Petroleum Co., Tulsa.
357	SW 34-23-7	160	300	Savoy Oil Co.
358	NE 7-24-7	160	1,500	Sinclair Oil & Gas Co., Tulsa.
359	SE 7-24-7	160	2,400	Phillips Petroleum Co.
360	NW 8-24-7	160	2,100	Skelly Oil Co.
361	SW 8-24-7	160	2,800	Mid-Kansas Oil & Gas Co.
362	SE 1-25-7	160	300	J. H. Peters, Great Falls, Mont.
363	SW 1-25-7	160	300	J. H. Peters, Great Falls, Mont.
364	NE 8-25-7	160	300	Indian Territory Illuminating Oil Co.
365	SE 8-25-7	160	1,100	Phillips Petroleum Co.
366	NW 9-25-7	160	1,100	Skelly Oil Co., Tulsa.
367	SW 9-25-7	160	1,600	Mid-Kansas Oil & Gas Co.
368	NE 10-25-7	160	4,100	Mid-Continent Petroleum Corp.
369	SE 10-25-7	160	4,700	Mid-Continent Petroleum Corp.
370	NE 12-25-7	160	1,300	Skelly Oil Co.
371	NW 12-25-7	160	300	Savoy Oil Co., Tulsa.
372	NW 19-25-7	160	300	A. G. Oliphant and Peters Petroleum Co.
373	SW 19-25-7	160		Passed.
374	NW 21-25-7	160		Passed.
375	SE 21-25-7	160		Passed.
376	SW 21-25-7	160		Passed.
377	SE 31-25-7	160	300	Devonian Oil Co.
378	NW 32-25-7	160	300	Devonian Oil Co.
379	SW 32-25-7	160	1,300	Devonian Oil Co.
380	NE 34-25-7	160		Passed.
381	NW 34-25-7	160		Passed.
382	NE 8-26-7	160	300	Indian Territory Illuminating Oil Co.
383	NW 8-26-7	160	800	Phillips Petroleum Co.
384	SE 8-26-7	160	900	Skelly Oil Co.
385	SW 8-26-7	160	1,900	C. F. Lake et al.
386	NE 10-26-7	160		Passed.
387	NW 11-26-7	160		Passed.
388	SW 15-26-7	160		Passed.
389	SE 21-26-7	160	800	Phillips Petroleum Co.
390	SW 21-26-7	160	1,100	Devonian Oil Co.
391	NE 23-26-7	160		Passed.
392	NE 28-26-7	160	1,200	Skelly Oil Co. [Holland.
393	NW 28-26-7	160	1,200	Union Oil & Mining Co., Tulsa, care Ed
394	SW 28-26-7	160	300	A. G. Oliphant and Peters Petroleum Co.
395	NW 31-26-7	160		Passed.
396	NW 35-26-7	160		Passed.
397	NW 3-27-7	160		Passed.
398	SW 3-27-7	160		Passed.
399	NE 4-27-7	160		Passed.
400	SE 4-27-7	160		Passed.
401	NE 13-27-7	160		Passed.
402	NW 13-27-7	160		Passed.
403	SE 13-27-7	160		Passed.
404	SW 13-27-7	160		Passed.
405	NE 16-27-7	160		Passed.
406	NE 20-27-7	160	300	Indian Territory Illuminating Oil Co.
407	SE 20-27-7	160	300	Indian Territory Illuminating Oil Co.
408	NW 21-27-7	160	300	Indian Territory Illuminating Oil Co.
409	SW 21-27-7	160	400	Phillips Petroleum Co., Bartlesville.
410	SE 30-27-7	160		Passed.
411	SW 30-27-7	160		Passed.
412	NE 21-27-7	160		Passed.
413	NW 31-27-7	160		Passed.
414	NE 33-27-7	160		Passed.
415	NW 33-27-7	160		Passed.
416	SE 33-27-7	160		Passed.
417	SW 33-27-7	160		Passed.
418	NE 2-28-7	160		Passed.
419	NW 2-28-7	160		Passed.
420	SE 2-28-7	160		Passed.
421	SW 2-28-7	160		Passed.
422	NE 5-28-7	160		Passed.
423	NW 5-28-7	160		Passed.
424	SE 5-28-7	160		Passed.
425	SW 5-28-7	160		Passed.
426	NE 13-28-7	160		Passed.
427	NW 13-28-7	160		Passed.
428	SE 13-28-7	160		Passed.
429	SW 13-28-7	160		Passed.
430	NE 18-28-7	160		Passed.
431	NW 18-28-7	160		Passed.
432	SE 18-28-7	160		No sale.
433	SW 18-28-7	160		Passed.
434	SE 20-28-7	160		Passed.
435	SE 25-28-7	160		Passed.



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EFFICIENT DEPENDABLE POWER

There are forty years of intensive, specialized *oil country experience* back of "Western" Engines—a fact that in a large measure explains the outstanding supremacy of these engines in oil country work. And surely, the choice of seven of our leading oil companies whose combined investments in "Western" Engines total well over two and a quarter million dollars, may be construed to indicate the strength and stability of this supremacy.

"Western" Oil Field Engines and
Reverse-Gear—25-60 H.P.
Duplex and Twin-Duplex Engines
80 to 400 Horsepower
Diesel Engines 30 to 375 Horsepower

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Los Angeles, California

San Francisco Offices and Factory:
18th and Alabama Streets

720 So. Kenosha St.,
Tulsa, Okla.
1106 Nineteenth St.,
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"WESTERN"

S E R V I C E

BETTER MATERIALS

FACT NO. 6

THE steel backing on the cutting edges of the perfected Spengler Core Drill is extremely tough and hard. The softer metal wearing away behind maintains a self sharpening condition which results in holding a sharp cutting edge for a long period.

SPENGLER
CORE DRILLING COMPANY

MAIN OFFICE AND PLANT
12901 SO. MAIN ST., STATION H. TEL. COMPTON 1153 & 1301
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R E S U L T S

True Economy in "UNITED" Products

"United" Products are designed right and constructed right. The workmanship and material is of the best—and field erection is second to none. All of these points go to make up the "True Economy" always to be found in "United" Products.

Send us your inquiries for

Storage Tanks	Loading Racks	Pipe Fittings
Air Tanks	Stills	Acid Tanks
Refineries	Towers	Look Boxes
Agitators	Condenser Boxes	Etc., Etc., Etc.

Quotations Promptly Furnished

UNITED IRON WORKS, Inc.

TULSA KANSAS CITY, MO. DALLAS

Tract Number	Description	Acreage	Bonus	Purchaser—
436	SW 25-28-7	160		Passed.
437	NW 26-28-7	160	300	C. H. Codding, Foraker.
438	SW 26-28-7	160	300	C. H. Codding, Foraker.
439	NE 27-28-7	160	300	C. H. Codding, Foraker.
440	SE 27-28-7	160	300	C. H. Codding, Foraker.
441	NW 29-28-7	160		Passed.
442	SW 29-28-7	160		Passed.
443	NE 36-28-7	160		Passed.
444	NW 36-28-7	160	300	C. E. Ashbrook, Fairfax.
445	NE 13-29-7	160		Passed.
446	NW 13-29-7	160		Passed.
447	SE 13-29-7	160		Passed.
448	SW 13-29-7	160		Passed.
449	NW 16-28-7	160		Passed.
450	SW 16-29-7	160		Passed.
451	NE 17-29-7	160		Passed.
452	SE 17-29-7	160		Passed.
453	SE 19-29-7	160		Passed.
454	SW 19-29-7	160		Passed.
455	NE 22-29-7	160		Passed.
456	NW 22-29-7	160		Passed.
457	SE 22-29-7	160		Passed.
458	SW 22-29-7	160		Passed.
459	SW 25-29-7	160		Passed.
460	NE 30-29-7	160		Passed.
461	NW 30-29-7	160		Passed.
462	NW 35-29-7	160		Passed.
463	SE 9-23-6	160	300	Phillips Petroleum Co.
464	SW 10-23-6	160	2,000	Skelly Oil Co.
465	NW 15-23-6	160	2,000	The Texas Co.
466	NE 16-23-6	160	2,100	Prairie Oil & Gas Co.
467	NW 18-23-6	160	2,200	Indian Territory Illuminating Oil Co.
468 Fr.	NW 18-23-6	92.72	450	Union Oil & Mining Co., Tulsa.
469	SE 18-23-6	160	1,400	Amerada Petroleum Co., Tulsa.
470 Fr.	SW 18-23-6	125.35	350	Union Oil & Mining Co., Tulsa.
471	NW 23-23-6	160		Passed.
472	SW 23-23-6	160		Passed.
473	SW 29-23-6	160		Passed.
474	SE 30-23-6	160		Passed.
475 Fr.	SW 30-23-6	92.15		Passed.
476	NE 11-24-6	160	11,000	Prairie Oil & Gas Co.
477	SE 11-24-6	160	7,500	Prairie Oil & Gas Co.
478	NW 12-24-6	160	10,000	Sinclair Oil & Gas Co.
479	SW 12-24-6	160	7,000	Marland Oil Co., Ponca City.
480	NE 15-24-6	160	6,500	Marland Oil Co., Ponca City.
481	NW 15-24-6	160	8,100	Prairie Oil & Gas Co.
482	SE 15-24-6	160	4,100	Snowden & McSweeney Co., Tulsa.
483	SW 15-24-6	160	4,600	Gypsy Oil Co.
484	NW 17-24-6	160	3,000	Indian Territory Illuminating Oil Co.
485	SW 17-24-6	160	2,100	Phillips Petroleum Co.
486	NE 18-24-6	160	2,500	Prairie Oil & Gas Co.
487	SE 18-24-6	160	2,600	Mid-Kansas Oil & Gas Co.
488	NE 26-24-6	160	900	Devonian Oil Co.
489	NW 26-24-6	160	3,600	Phillips Petroleum Co.
490	SE 26-24-6	160	3,700	Devonian Oil Co.
491	SW 26-24-6	160	3,000	Mid-Kansas Oil & Gas Co.
492	NW 29-24-6	160		Passed.
493	SW 29-24-6	160		Passed.
494	NE 2-25-6	160	15,000	Prairie Oil & Gas Co.
495	SE 2-25-6	160	16,000	Prairie Oil & Gas Co.
496	NW 13-25-6	160	3,100	Barnsdall Oil Co.
497	NE 24-25-6	160	1,800	Union Oil & Mining Co., Tulsa.
498	SE 24-25-6	160	2,000	Prairie Oil & Gas Co.
499	NW 31-25-6	160	16,000	Gypsy Oil Co.
500	SW 31-25-6	160	8,100	Gypsy Oil Co.
501	SE 20-26-6	160	110,000	Phillips Petroleum Co.
502	SE 21-26-6	160	321,000	Lewis Oil Co., Tulsa.
503	SW 21-26-6	160	526,000	Phillips Petroleum Co.
504	NW 22-26-6	160	29,000	Mid-Kansas Oil & Gas Co., Tulsa.
505	NW 4-27-6	160	1,800	A. G. Oliphant and Peters Petroleum Co.
506	SW 4-27-6	160	1,000	C. F. Lake et al, Pawhuska.
507	SE 7-27-6	160	222,000	Phillips Petroleum Co., Bartlesville.
508	SW 7-27-6	160	420,000	Phillips Petroleum Co., Bartlesville.
509	NE 13-27-6	160	300	A. V. Jackson, Cincinnati, Ohio.
510	SW 13-27-6	160	300	A. V. Jackson, Cincinnati, Ohio.
511	NE 20-27-6	160	8,000	A. G. Oliphant and Peters Petroleum Co.
512	NE 34-27-6	160	300	Kewanee Oil & Gas Co., Tulsa.
513	NW 34-27-6	160	300	Kewanee Oil & Gas Co., Tulsa.
514	SE 34-27-6	160	300	Kewanee Oil & Gas Co., Tulsa.
515	SE 3-28-6	160	300	Phillips Petroleum Co., Tulsa.
516	SW 3-28-6	160		Passed.
517	NE 8-28-6	160	300	Indian Ter. Illum. Oil Co., Bartlesville.
518	NW 8-28-6	160		Passed.
519	SE 8-28-6	160		Passed.
520	SW 8-28-6	160		Passed.
521	NE 10-28-6	160		Passed.
522	NW 10-28-6	160	300	Mid-Kansas Oil & Gas Co., Tulsa.
523	SW 10-28-6	160		Passed.
524	NW 18-29-6	160		Passed.
525	SE 18-29-6	160		Passed.
526	NE 21-29-6	160		Passed.
527	NW 21-29-6	160		Passed.
528	SE 21-29-6	160		Passed.
529	SW 21-29-6	160		Passed.
530	NE 23-29-6	160		Passed.
531	NW 23-29-6	160		Passed.
532	SE 23-29-6	160		Passed.
533	SW 23-29-6	160		Passed.
534	NE 33-29-6	160		Passed.
535	NW 33-29-6	160		Passed.
536	SE 33-29-6	160		Passed.
537	SW 33-29-6	160		Passed.
538	NE 5-24-5	160	1,000	The Texas Co., Tulsa.
539	NW 5-24-5	160	900	Barnsdall Oil Co., Tulsa.
540	SE 5-24-5	160	1,000	Savoy Oil Co., Tulsa.
541	SW 5-24-5	160	300	Barnsdall Oil Co., Tulsa.
542 Fr.	NW 17-24-5	158	1,500	Barnsdall Oil Co., Tulsa.
543 Fr.	SW 17-24-5	46	50	Barnsdall Oil Co., Tulsa.
544	NE 18-24-5	160	300	Barnsdall Oil Co., Tulsa.
545 Fr.	SE 18-24-5	142.40	300	Barnsdall Oil Co., Tulsa.
546	NE 3-25-5	160	300	Barnsdall Oil Co., Tulsa.
547	NW 3-25-5	160	400	Savoy Oil Co., Tulsa.
548	SE 3-25-5	160	300	Barnsdall Oil Co., Tulsa.
549	SW 3-25-5	160	300	Barnsdall Oil Co., Tulsa.
550	NW 16-25-5	160		Passed.
551	SW 16-25-5	160	300	Barnsdall Oil Co., Tulsa.
552	NE 17-25-5	160		Passed.
553	SE 17-25-5	160		Passed.
554	SE 19-25-5	160		Passed.
555	SW 19-25-5	160	300	Barnsdall Oil Co., Tulsa.
556	NW 26-25-5	160	5,100	Barnsdall Oil Co., Tulsa.
557	SW 26-25-5	160	500	Gypsy Oil Co., Tulsa.
558	NE 27-25-5	160	3,200	Gypsy Oil Co., Tulsa.
559	SE 27-25-5	160	4,300	Gypsy Oil Co., Tulsa.
560	NE 30-25-5	160		Passed.
561	NW 30-25-5	160		Passed.
562	NE 36-25-5	160	12,000	Gypsy Oil Co., Tulsa.
563	SE 36-25-5	160	16,000	Gypsy Oil Co., Tulsa.
564	SE 2-26-5	160	1,000	A. G. Oliphant and Peters Petroleum Co.
565	NE 6-26-5	160	300	Jess Moore, Kaw City.
566	NW 6-26-5	160	300	Jess Moore, Kaw City.
567	SE 6-26-5	160	2,200	Barnsdall Oil Co., Tulsa.
568	SW 6-26-5	160	4,000	Barnsdall Oil Co., Tulsa.
569	SE 17-26-5	160		Passed.
570	NE 20-26-5	160		Passed.
571	NW 26-26-5	160	400	The Texas Co., Tulsa.
572	SW 26-26-5	160	300	George Faulton, Burbank.
573	NE 27-26-5	160	300	George Faulton, Burbank.
574	SE 27-26-5	160	300	George Faulton, Burbank.
575	NE 30-26-5	160		Passed.
576	NW 30-26-5	160		Passed.
577	SE 30-26-5	160		Passed.
578	SW 30-26-5	160		Passed.
579	SW 1-27-5	160	710,000	Phillips Petroleum Co., Bartlesville.
580	NE 2-27-5	160	366,000	Phillips Petroleum Co., Bartlesville.
581	NW 2-27-5	160	68,000	Skelly Oil Co., Tulsa.
582	NE 3-27-5	160	6,500	The Texas Co., Tulsa.
583	NE 12-27-5	160	625,000	Phillips Petroleum Co., Bartlesville.
584	NE 27-27-5	160	1,100	Mid-Kansas Oil & Gas Co., Tulsa.
585	SW 25-27-5	160	12,000	Mid-Kansas Oil & Gas Co., Tulsa.
586	NW 2-28-5	160		Passed.
587	SW 2-28-5	160		Passed.

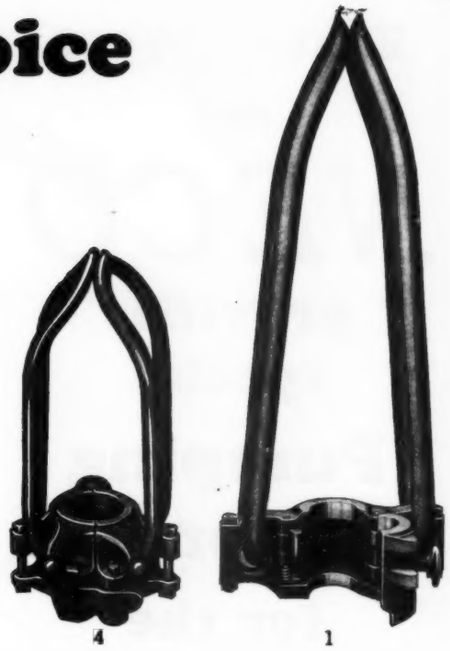
It's a Wilson

Take your choice

4 types

of

Wilson Tubing Elevators



4 1

2

3

1. **Wilson Extra-Heavy Spring-Latch Side-Door Tubing Elevator**
Similar in design to the Wilson Heavy Casing Type, with convenient side door that snaps shut tightly—and stays locked. 2", 2½" and 3" sizes. This is the type used in running tubing into the famous Miley-Athens Well No. 6—the world's deepest. You can impose any weight of tubing on this rugged elevator.

2. **Wilson Extra-Heavy Spring-Latch Rotary Tubing Elevator**
Just like our Rotary type heavy duty elevators, but adapted to 2", 2½" and 3" diameters. It's a fast worker—can be swung around the tubing without stopping the line. Note the easy-grip handles and the big, powerful latch.

3. **Wilson Double Extra-Heavy Spring-Latch Rotary Tubing Elevator.**
Here's the Rotary type elevator for handling very long strings of tubing—4,000 feet and more where excessive strain is imposed. While extra rugged, it is easy to handle, hangs plumb and can be worked as fast as our other types.

4. **Wilson Light-Weight Spring-Latch Rotary Tubing Elevator**
This is the midget—but it has a lot of strength. It's built for shallow fields. Can be picked up and carried by hand. Mighty convenient.

HERE'S A GOOD IDEA

Use Wilson Tubing Elevators and Wilson Tongs — a great combination — because both embody the patented spring-latch feature. The boys in the field are "strong" for this equipment.

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In Pumping Oil

East Is East

West Is West

and

NECO

provides special

Pumping Equipment

for the special needs of each

REGULAR STYLE NECO PUMP which has long been a favorite in the Eastern Fields where the great advantages of its exclusive design and operation were first fully demonstrated.

TEXAS STYLE NECO PUMP of which thousands are in Mid-Continent service. In many cases with very large companies this Neco Pump has become standard and practically exclusive equipment.

HERE IS ONE OF THE popular Neco Traveling Valves used in every Eastern Oil Field.

NECO NON-CORROSIVE BALL AND SEAT — made from a Special Alloy for use in wells where acid water is troublesome.

THIS NECO TRAVELING VALVE is especially designed to meet pumping conditions in the West.

In Pumping Equipment there's a Neco particularly made to meet each and every requirement.

Stocked by Oil Well Supply Co.

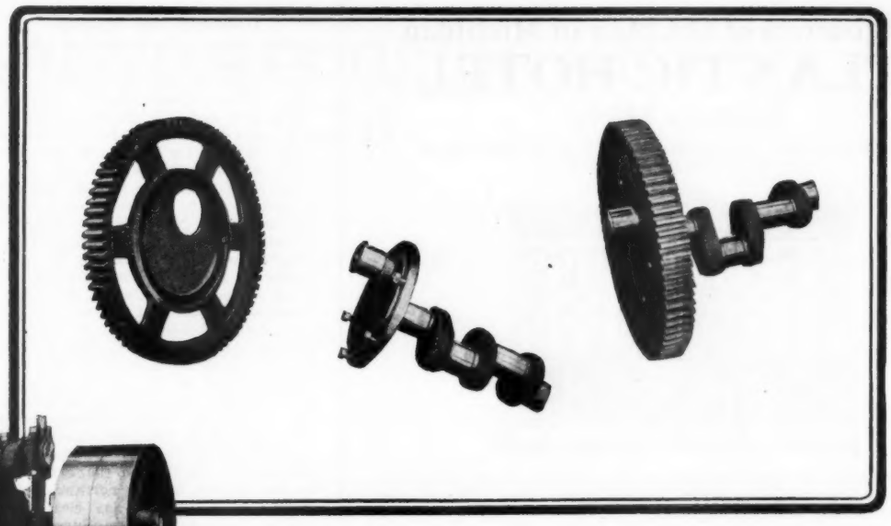
Northrup Equipment Co.

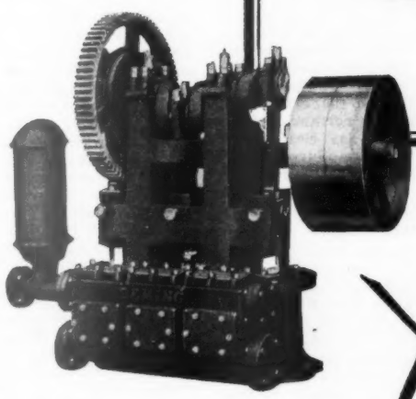
Parkersburg, W. Va.

Fort Worth, Tex.
F. J. Ackman
Representative

Nowata, Okla.
H. T. Torner
Representative

Tract Number		Description	Acreage	Bonus	Purchaser—
588		NW 11-28-5	160		Passed.
589		SW 11-28-5	160		Passed.
590		NW 14-28-5	160		Passed.
591		NE 13-29-5	160		Passed.
592		NW 13-29-5	160		Passed.
593		SE 13-29-5	160		Passed.
594		SW 13-29-5	160		Passed.
595		NE 23-29-5	160		Passed.
596		SE 23-29-5	160		Passed.
597		SW 23-29-5	160		Passed.
598		NE 26-29-5	160		Passed.
599		NW 26-29-5	160		Passed.
600		NE 34-29-5	160		Passed.
601		SE 34-29-5	160		Passed.
602		NE 36-29-5	160		Passed.
603		NW 36-29-5	160		Passed.
604		SE 36-29-5	160		Passed.
605		SW 36-29-5	160		Passed.
606	Fr.	NW 2-23-4	88.02		Passed.
607	Fr.	SW 2-23-4	17.55	25	W. S. Crow et al, Hominy.
608		NE 3-23-4	160		Passed.
609		NW 3-23-4	160		Passed.
610	Fr.	SE 3-23-4	153	300	W. S. Crow et al, Hominy.
611		SW 3-23-4	160		Passed.
612		SE 8-23-4	160		Passed.
613		SW 8-23-4	160		Passed.
614	Fr.	NE 17-23-4	151.35		Passed.
615	Fr.	NW 17-23-4	159.30		Passed.
616		NE 2-24-4	160		Passed.
617		NW 2-24-4	160		Passed.
618		SE 2-24-4	160		Passed.
619		SW 2-24-4	160		Passed.
620		NE 4-24-4	160		Passed.
621		NW 4-24-4	160		Passed.
622		SE 4-24-4	160		Passed.
623		SW 4-24-4	160		Passed.
624		NE 5-24-4	160		Passed.
625	Fr.	NW 5-24-4	79.55		Passed.
626	Fr.	SE 5-24-4	79		Passed.
627		NE 16-24-4	160	300	Barnsdall Oil Co.
628	Fr.	NW 16-24-4	126.60	300	Barnsdall Oil Co., Tulsa.
629		SE 16-24-4	160	800	Indian Ter. Illum. Oil Co., Bartlesville.
630		SW 16-24-4	160	300	Barnsdall Oil Co., Tulsa.
631	Fr.	NW 25-24-4	117.35		Passed.
632	Fr.	SW 25-24-4	25.25		Passed.
633		NE 26-24-4	160	300	Barnsdall Oil Co., Tulsa.
634		NW 26-24-4	160	300	Barnsdall Oil Co., Tulsa.
635	Fr.	SE 26-24-4	155.30	300	Barnsdall Oil Co., Tulsa.
636		SW 26-24-4	160	300	Barnsdall Oil Co., Tulsa.
637		NE 1-25-4	160		Passed.
638		NW 1-25-4	160		Passed.
639		SE 1-25-4	160		Passed.
640		SW 1-25-4	160		Passed.
641		NE 6-25-4	160		Passed.
642		NW 6-25-4	160		Passed.
643		SE 6-25-4	160		Passed.
644		SW 6-25-4	160		Passed.
645		NE 13-25-4	160		Passed.
646		NW 13-25-4	160		Passed.
647		SE 13-25-4	160		Passed.
648		SW 13-25-4	160		Passed.
649		NE 18-25-4	160		Passed.
650		NW 18-25-4	160		Passed.
651		SE 18-25-4	160		Passed.
652		SW 18-25-4	160		Passed.
653		NE 26-25-4	160		No sale.
654		NW 26-25-4	160		No sale.
655	Fr.	NE 1-26-4	70.40	75	Jess Moore, Kaw City.
656	Fr.	SE 1-26-4	58.45		Passed.
657	Fr.	NE 10-26-4	28.60		Passed.
658	Fr.	NW 10-26-4	69.55		Passed.
659		SE 10-26-4	160		Passed.
660		SW 10-26-4	160		Passed.
661	Fr.	SE 11-26-4	71.45	70	Skelly Oil Co., Tulsa.
662	Fr.	SW 11-26-4	120.15		Passed.
663		SE 12-26-4	160	700	Skelly Oil Co.
664	Fr.	SW 12-26-4	132.55	300	Skelly Oil Co.
665		NE 13-26-4	160	350	Skelly Oil Co.
666		NW 13-26-4	160	300	Skelly Oil Co., Tulsa.
667		NE 17-26-4	160		Passed.
668	Fr.	NW 17-26-4	109.30		Passed.
669		SE 17-26-4	160		Passed.
670		SW 17-26-4	160		Passed.
671		NE 21-26-4	160		Passed.
672		NE 22-26-4	160		Passed.
673		NW 22-26-4	160		Passed.
674		SE 27-26-4	160		Passed.
675		NE 28-26-4	160		Passed.
676		NE 30-26-4	160		Passed.
677	Fr.	NW 30-26-4	139		Passed.
678		SE 30-26-4	160		Passed.
679	Fr.	SW 30-26-4	149.65		Passed.
680		NE 32-26-4	160		Passed.
681		SE 33-26-4	160		Passed:
682		NE 3-23-3	160		Passed.
683		NW 3-23-3	160		Passed.
684		SE 3-23-3	160		Passed.
685		SW 3-23-3	160		Passed.
686		NE 13-23-3	160	300	Indian Ter. Illum. Oil Co., Bartlesville.
687		NW 13-23-3	160	500	Indian Ter. Illum. Oil Co., Bartlesville.
688	Fr.	SE 13-23-3	153.56	300	Indian Ter. Illum. Oil Co., Bartlesville.
689		SW 13-23-3	160	300	Indian Ter. Illum. Oil Co., Bartlesville.
690	Fr.	NE 24-23-3	42.05	50	Indian Ter. Illum. Oil Co., Bartlesville.
691	Fr.	NW 24-23-3	120.90	300	Indian Ter. Illum. Oil Co., Bartlesville.
692		NE 4-24-3	160	300	Indian Ter. Illum. Oil Co., Bartlesville.
693		NW 4-24-3	160		Passed.
694	Fr.	SE 4-24-3	23.40	25	Joe Barny, Duncan Hotel, Pawhuska.
695	Fr.	SW 4-24-3	23.40	25	Joe Barny, Duncan Hotel, Pawhuska.
696	Fr.	NE 24-24-3	104.40		Passed.
697	Fr.	NW 24-24-3	22.70		Passed.
698		SE 24-24-3	160		Passed.
699	Fr.	SW 24-24-3	154.80		Passed.
700	Fr.	NE 28-24-3	62.40		Passed.
701	Fr.	NW 28-24-3	11	15	W. S. Crow et al. Hominy.
702		SE 28-24-3	160		Passed.
703	Fr.	SW 28-24-3	137		Passed.
704		NE 33-24-3	160		Passed.
705		NW 33-24-3	160		Passed.
706		NE 5-25-3	160		Passed.
707		SE 5-25-3	160		Passed.
708		NW 6-25-3	160		Passed.
709		SE 6-25-3	160		Passed.
710		SW 6-25-3	160		Passed.
711		NW 8-25-3	160		Passed.
712		SW 8-25-3	160		Passed.
713		NE 14-25-3	160		Passed.
714		NW 14-25-3	160		Passed.
715		SE 14-25-3	160		Passed.
716		SW 14-25-3	160		Passed.
717		NE 19-25-3	160		Passed.
718		NW 19-25-3	160		Passed.
719		SE 19-25-3	160		Passed.
720		SW 19-25-3	160		Passed.
721		SW 24-25-3	160		Passed.
722		SE 33-25-3	160		Passed.
723		SW 33-25-3	160		Passed.
724	Fr.	NE 1-24-2	89.30		Passed.
725	Fr.	NW 1-24-2	35.09		Passed.
726	Fr.	NE 2-24-2	21.90		Passed.
727		NE 36-25-2	160		Passed.
728	Fr.	NW 36-25-2	93.07		Passed.
729		SE 36-25-2	160		Passed.
730	Fr.	SW 36-25-2	136.32		Passed.
731	Fr.	SE 25-26-2	139.75		Passed.
732	Fr.	SW 25-26-2	25.36		Passed.
733	Fr.	NE 35-26-2	76.40		Passed.
734		SE 35-26-2	160		Passed.
735	Fr.	SW 35-26-2	51.50		Passed.
736		NE 36-26-2	160		Passed.
737	Fr.	NW 36-26-2	158.85		Passed.
738		SE 36-26-2	160		Passed.
739		SW 36-26-2	160		Passed.





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SOUTHWEST TEXAS

(Continued from Page 36)

making rather large production, considering the depth, in No. 1 Taylor. Golden West, which got a dry hole down to 520 feet in No. 1 Odem, two or three locations east of No. 1 Taylor, moved 380 feet south and started a test which logged with No. 1 Taylor down to 80 feet, where a bit was lost in the hole, and it was skidded a few feet and started again, and is again down to the lime rock at 80 feet, encountered in No. 1 Taylor. Buchanan is drilling on No. 1 Odem, north of Golden West's No. 1. K. Reager is moving on to Survey 117 on the Langfeld farm. Dr. J. M. Cavender, of Uvalde, has made a location on Survey 1,479 on the Betot farm. Other people have a location in Survey 117 and will drill. W. F. Kittle is down about 600 feet in his test on the Richter farm, in Survey 89, off a mile or more west from the Taylor well, and has a showing with a higher gravity green-colored oil which he is preparing to test. Kittle & Townley are down about 200 feet in the test on the Betot farm, in Survey 134, a little northwest of the Taylor well. Jacobs has cleared title and is about to start on Survey 1,473. Golden West is down about 100 feet with a spudder in No. 1 Betot, in Survey 134, a little to the west of the Taylor well.

Gas Well Feature

Elsewhere in Medina County the feature of the week is the gas well on the Adams farm, in Medina County, a mile south of the Ina Field, drilled by Henderson & Holden, which at 903 feet is running wild. The well has 10-inch casing set at 485 feet, and when the gas came in it came with such force as to plug the bit, and the rotary was unable to force in mud to shut it off. The owners are endeavoring to complete the well at the present depth. Six-inch casing was run in over the drill stem, but the well was mudded up so that the casing could not be lowered. It came in Sunday, March 14, and late the past week had not been shut off. It is estimated at around 5,000,000 to 7,000,000 feet and is of especial importance as indicating the existence of a fault lime and structure there.

Ina Oil Co., which announced recently a test on the Louis Graff farm, in William Bryan Survey No. 20, north of the Ina Field, has closed a deal with the Alamo Drilling & Leasing Co., which will make a test on the tract in the expectation of finding Serpentine. Alamo Drilling & Leasing Co. is also to move in a rig this week for an Edwards lime test on the Kriesler farm, a little west of the town of Noonan, in the eastern part of the county. L. Smith has spudded in and has been drilling for a few days on the Jay C. Jay farm, in Section 531, west of the Ina Field 2 miles, and Ina Oil Co. is nearly ready to complete No. 2 Viola Wilson, on the Moses Griffin survey. Gibson Oil Corp. has spudded in No. 4 Viola Wilson, offsetting its No. 1 on the east. Golden West Oil Co. is endeavoring to solve the sand trouble in its first four wells before starting on the fifth in the Ina Field. No. 5 is rigged up and ready to spud in. No. 1 is making about 50 bbls. a day, which is being used for fuel on drilling wells.

Nueces County

H. H. Givan's wildcat on the Allen farm, at Calallen, in Nueces County, is being completed by the Ray Oil Co., which has pulled the liner at 3,200 feet and is back in the hole with tools. The hole was drilled to 4,056 feet and plugged back to 3,200 feet for a test, but sand heaved into the casing and the test was never completed. Ray Oil Co. has contracted to carry the hole to 4,500 feet. The Texas Co., down the Nueces River a little toward Corpus Christi, is drilling at 4,000 feet in the wildcat test on the Driscoll farm. The Texas well is on the White Point anticline and the Givan well on the Sinton anticline, both shown on Deussen's report, Professional Paper No. 126.

San Patricio County

John Sigmund has started No. 7 McCampbell at Aransas Pass, where he has been wildcatting for five years for oil, and Moody-Seagraves are drilling on their White Point test.

Val Verde County

Plateau Oil Co. is rigging up on its test on the Harrison farm in Val Verde County, several miles east of Del Rio.

Zapata County

The Texas Co. has completed its fishing job on the Jennings farm, in Zapata County, and is drilling below 3,300 feet. The gas sand encountered in the first test there was at 3,950 feet.

Milam County

John E. Lee's No. 1 Sanford, a deep test east of Rockdale, has completed reaming and is drilling again at 1,700 feet. It is a test being drilled on Pure Oil Co. geology and expects to pick up the Minerva sand at 1,900 feet. In the shallow Rockdale Field, Coffield & Hale's No. 1 Urban is showing both gas and oil. Kent-Middleton Refining Co. has leased 112 acres out of the Andrew Strelsky 220-acre tract and has completed and put on the pump four wells, and is starting No. 5. Roy Long has spudded in on No. 1-A Strelsky. W. A. Jones completed two wells on the Tom Phillips 35-acre tract, which are making considerable gas. Bartlett Production Co. has contracted to have five wells drilled on the Coulter lease, the work to start at once. Rockdale Junior Oil Co. is drilling at 400 feet in No. 3 Hamilton, offsetting No. 2, which was a light producer. Union Production & Power Co.'s No. 2 Strelsky is nearly ready to complete. Jennings Oil Co. has completed No. 12 Herbert Branch, which is the eleventh producer on the lease. Roundtree, White & Simpson's No. 14 Bluebonnett has set casing. W. S. Guthrie is moving in a rig to drill No. 1 Citizens State Bank lease.

Mirando District

Three Rivers Oil Co., which lately entered the Mirando Field, has purchased 80 acres in the Edgington subdivision of the Puig Brothers ranch, consisting of Blocks 75 and 76, with two wells recently completed and pumping about 150 bbls. each from a depth of 1,700 feet, and a third well ready to set casing. The wells are along the south line of Block 75. The price was $50,000 in cash and $100,000 to be paid in oil.

INDEPENDENT ELECTION

At the annual meeting of the Independent Oil & Gas Co. stockholders at Tulsa, Okla., the number of directors was increased from 9 to 11. There were two vacancies on the board, and these were filled and the additional directors elected. The new members of the board are Villard Martin, Tulsa, Okla.; Don M. Kelley of Kelley, Drayton & Converse, and J. D. Duncan of New York, and W. J. Zucker of Chicago, Ill. Other directors were reelected. W. S. Bouvier, vice president and director, has resigned from the Independent Oil & Gas Co. to become associated with the J. W. McCulloch Oil Co. of Okmulgee, Okla. His resignation is effective March 17. The vacancy caused by Mr. Bouvier's leaving the Independent will not be filled until the next directors meeting in April.

SAN JUAN FIELD

(Continued from Page 42)

jointly in applying for tentative application for a right of way for which they have set aside $1,000,000 to build the line.

There is considerable Congressional activity for amendatory legislation looking to large oil development on the lands of the Navajos. During the past week hearings have been in progress, although they have attracted but little attention, the object of which is to pass legislation before Congress adjourns so that the Secretary of the Interior may proceed in the advertisement of leases of a more attractive character than have prevailed under the existing law.

However, it is not believed that the building of the pipe line from the present oil structure to Gallup is dependent upon the enactment of this legislation. It is estimated that upon the completion

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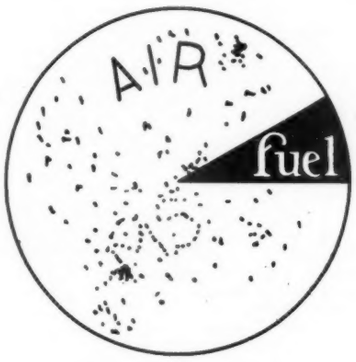

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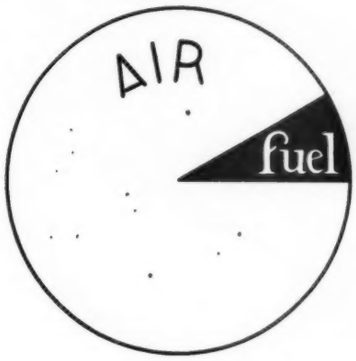

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of such a pipe line there will immediately be offered a volume of 10,000 bbls. daily for transportation to Gallup on the main line of the Santa Fe railroad. All other plans are tentative but it is thought there may be developed at Gallup refining facilities so that the products may be shipped by rail to available markets.

Question of Royalty

It has been understood, that the pipe line plans up to this time have more or less been held in abeyance until questions involved in pending legislation have been settled. What is known as the Bratton-Hayden bill, provides that the royalty derived from the oil shall be divided on the basis of 37½ per cent to the state in which the land is located and 62½ per cent to the Indians. The bill also provides for validating certain permits already granted under the former interpretation of the act, the title of which has come into dispute. Under this former interpretation of the act about 200 prospectors got permits under an executive order in areas both east and west of the location in which oil had been found and these permits later were revoked and many of them returned to the Government. Now it is felt by the Department and by oil operators generally that the development of the nontreaty area will be more conservative and better carried on if this nontreaty area, as well as the treaty area, are developed along similar lines.

The discussion of this entire question here shows that the Indians themselves are satisfied with the plan to allot to them 62½ per cent of the royalties with 37½ per cent to the state within the boundaries of which the land is located, but some of the societies and people who voluntarily assert themselves friends of the Indians want them to receive all of the revenue derived from the sale and operation of the oil land, both on the treaty land and the ceded or nontreaty land.

Under the act of 1891, leases within the Navajo reservation were granted for 10 years, and the Midwest Oil Co. went in at the Hogback structure and drilled a number of wells and got oil. If that law prevails, three years of their life have expired and they have only seven years left before the property will be up for releasing.

It is generally felt that such conditions are decidedly unbusiness like and that a pioneer organization such as was the Midwest Co. in this undertaking, is entitled to some consideration as that company was the first to go in and develop this structure.

It was the conviction that the law of 1891 was inequitable that resulted in the passage of the act of May 29, 1924, which amended the act of 1891, under which leases for the production of oil and gas are sold at auction after publication much the same as is done in the Osage. These leases run as long as oil or gas is found in commercial quantities.

Similar to Osage

Under the act of 1891, the Midwest Co. was not the only pioneer to go into this field. The Santa Fe Co. drilled a number of wells and got production in 1923, at Rattlesnake Dome. Table Mesa was developed in the same year by individuals as was the Beautiful Mountain structure by individuals and the Tocito Dome by the Gypsy Oil Co. All of these were under the ten-year lease plan and it is contended that as the proposed law provides for leases for ten years and as long thereafter as oil may be found in paying quantities, the pioneer companies and individuals are entitled to equal consideration.

It is pretty well settled here that the development of oil structures in the treaty and ceded lands of the Navajos should be under Government supervision such as pertains to the Osage tribe. This and other questions involved have been discussed before the subcommittee consisting of Senators Bratton, Cameron and La Follette of the Senate Committee of Indian Affairs. Herbert J. Hagerman, chairman of the Board of Navajo Commissioners, has been called to Washington to be present at these conferences.

The development that has taken place in the treaty lands has been entirely in New Mexico. It was in the vicinity of Shiprock, that the Midwest Refining Co obtained its first lease covering 4,800 acres. Its first well came in at 500 bbls.

Four Exploratory Tracts

There were four exploratory tracts, one at Tocito, which was sold for $4,000 bonus. Another tract was sold to the Gypsy Co. for $46,000, and that company went down 3,000 feet as required by the contract and got water. After two years arrangements have been made by the same company to drill another well which may produce oil.

In October, 1923, J. C. Bailey, associated with A. E. Carlton of the Holly Sugar Co. and the Holly Oil Co., obtained an exploratory contract covering Table Mesa. This is south of the Hogback and the exploratory contract was sold for a bonus of $17,500. The owners of this contract spent about $100,000 in their efforts to get oil, and they were rewarded with a fine water well. A year later they reassigned one-half interest in this contract to the Government, and this Government interest was assigned to the Continental Oil Co. That company went east about a half-mile against the advice of the experts, excepting those in their own employ, and struck oil. Such are the uncertain fortunes of the oil pioneer.

The third exploratory contract covered the Rattlesnake 4,080 acres, which was sold to S. C. Munoz, of New York, by whom it was transferred to the Santa Fe Co., that company selling to the Continental Oil Co. a half interest in the first shallow pool of 200 acres, for which the Continental paid $300,000, the original bonus paid having been $1,000. But this Rattlesnake structure now has a potential production of 6,000 bbls. with possibilities that are extremely interesting.

The fourth structure, known as Beautiful Mountain, was obtained by Neal B. Field, and has been sold to the Navajo Co. in which S. C. Munoz is also interested. The bonus for this structure was $1,000.

Nine other contracts, covering a smaller area, contiguous to Hogback were sold but none of them has produced oil However, none of them has gone beyond the shallow sands. It is not known how deep the Pennsylvania sand may be but it is estimated it is from 4,000 to 5,000 feet.

It is known that 73 per cent of the oil produced in the Rattlesnake is gasoline and naphtha. Its gravity is from 42½ to 44 degrees. It is said that this crude oil has been put into automobile tanks and cars have been operated by it without any process of distillation at all. It is of such a high grade of volatility, however, that it is extremely difficult to handle, owing to evaporation.

The action that is being taken and the record that has been made in respect to the Navajo Reservation shows that there is an oil field there the possibilities of which can hardly be stated. One of the most interesting features of this field rests in the uncertainty of what may be shown when the deeper sands are penetrated. Only then will it be known whether pools exist or not. In the Rattlesnake structure a well has been started to test these deeper sands.

The Department of the Interior now has under consideration the sale of more leases, the outcome of which depends upon what Congress does in the near future. In view of certain changes in the law that may be decided on shortly it is thought best to await Congressional action. For a long time it was said the Department would be ready to advertise for proposals whenever there was assurance of a sufficient number of bidders to produce reasonable competition. That is no longer the determining factor in the case. The point at issue now is involved in a settlement in some permanent plant for this development. There is ample evidence that competition will be active and that it will be possible to dispose of a large area for exploration and drilling purposes upon a reasonable basis to insure the drilling of test wells and development on much the same plan as that which now prevails in the Osage.

N. LOUISIANA-ARKANSAS

(Continued from Page 46)

Its No. 1 Dumas, Section 9-17-16, is drilling at 1,600 feet.

C. H. Allison's No. A-1 Fitzgerald, Section 17-18-15, is drilling at 2,960 feet. A derrick is standing for Arkansas Fuel Oil Co.'s No. 8 LaGrone, Section 1-16-17. Cement is being drilled out at 2,583 feet at Bailey and Trimble's No. 3 Lawton, Section 10-16-15. Barbare and associates are waiting for cement to set at 2,712 feet at No. 1 Houston, Section 12-16-16. Broderick and Calvert's No. B-5 Murphy, Section 8-16-15, has been drilled down 2,483 feet and the 6-inch is being set for 2,482 feet. Same operator's No. B-6 Murphy is drilling at 1,410 feet. Broderick and Calvert completed No. C-2 Murphy, Section 8-16-15, for a 115-bbl. pumper making 4 per cent b.s. in the sand at 2,624 to 2,627 feet.

Rigs Up

A rig is up for J. G. Childs' No. 2 fee, Section 8-16-16. J. W. Clark has a rig up for No. 7 Cook, Section 17-16-15. Clark's No. 5 Palmer, Section 9-16-15, is rigged up and waiting on orders. Operations at Clark & Melat's No. A-1 Saxon, Section 4-16-16, are being delayed because the drilling stem stuck at 2,765 feet.

Sam Cook's No. 7 Tatum, Section 7-16-15, was completed as a 20,000,000-foot gasser with 825 pounds rock pressure in sand at 2,635-37 feet. Eason and associates No. 7 Murphy, Section 15-16-15, is drilling at 2,150 feet. Same operators are arranging to deepen No. 3 Palmer, Section 9-16-15, which was completed 10 months ago at 2,494 feet flowing 400 bbls. daily.

El Dorado Union Oil Co's. No. 1 Ennis, Section 23-17-16, tested dry at 2,146 feet but found a showing of oil at 2,162 feet. Estes and associates completed their No. 1 Murphy, Section 15-16-15 in sand at 2,612-20 feet and it is making 100 bbls natural. Same operators had to recement the 4½-inch casing at 2,606 feet at No. 2 Murphy, same section.

Federal Petroleum Co.'s No. B-7 Lawton, Section 10-16-15, is pumping 100 bbls daily, 40 per cent salt water, from sand at 2,608,12 feet. At the Federal's No. B-2 Wells, Section 15-16-15, the drilling stem is being sidetracked at 2,001 feet. Ferguson Drilling Co's No. 2 Howard, Section 7-16-16, is drilling at 2,300 feet.

Gulf Co. Work

Gulf Refining Co's. No. 17 Alphin, Section 2-16-15, which was completed last October for a 350 bbl well, natural, at 2,385 feet and which is being drilled deeper, is shut down at 2,448 feet because of high water. Gulf has a rig up for No. 2 Clawson, Section 14-16-15. Gulf Co's. No. 37 Hardy-Murphy, Section 5-16-15, is a rig. Its No. 1 McElroy, Section 4 -16-16, was completed for a 10-bbl pumper in sand at 2,689-94 feet. No. 2 McMullen, Section 1-16-16, is pumping 165 bbls daily, 4 per cent b. s., in sand at 2,560-67 feet. No. 3 McMullen is drilling at 272 feet.

Grimes & Jones' No. 1 Lovett in the center of the NE NE SE, Section 6-18-14, is drilling at 300 feet. Hickman and associates' No. 4 Hays, Section 21-16-15, is coring at 2,700 feet. Humble Oil & Refining Co. is trying to get returns at No. B-3 Flenniken, Section 9-16-15, at 2,455 feet. Humble's No. 5 Giller, Section 15-16-15 was completed for an 85 bbl. pumper at 2,576 feet and its No. B-2 Lawton, Section 7-16-15, is drilling at 2,372 feet.

Had Show of Oil

E. M. Jones' No. 9 Murphy, Section 17-16-15, tested 600 foot of salt water with a show of oil at 2,673. The test is shut down at 2,686 feet waiting for orders. Jampeter and associates cemented the 12-inch casing at 203 feet at No. 1 Townes, Section 34-19-11. Keen & Woolf cemented the 6-inch at 2,561 feet at No. 2 Bradford, Section 7-16-15. W. R. Keever's No. 6 Murphy, Section 8-16-15, is a derrick. Keever's No. 5 Sanford, Section 17-16-15, is drilling at 100 feet.

Kennebrew and associates' No. 1 Williams, Section 3-16-15, is being produced by compressed air and is making 15 bbls. from the sand at 2,542-44 feet. Their No. 7 Williams, Section 3-16-15, is drilling at 2,030 feet.

Louisiana Oil Refining Corp.'s No. 4 Hodges, Section 7-16-15, is coring at 2,682 feet. Laurel Oil & Gas Co's. No. 5 Tatum, Section 7-16-15, is flowing 40 bbls. daily in sand at 2,552-61 feet. Lion Oil & Refining Co's. No. 3 Wilson, Section 17-16-15, was completed for a 100-bbl. pumper in sand at 2,670-76 feet. Its No. 1, Section 17-16-15, is to be deepened and rig is up. It was formerly completed at 2,126 feet by the Monarch Oil Co., and making 800 bbls. on the swab. Lion Co's. No. A-6 Murphy, Section 7-16-15 is a derrick and No. A-9 Murphy has been temporarily abandoned and the rig moved off. No. C-9 Murphy, Section 8-16-15, is pumping 30 bbls. daily, 4 percent b. s. at 2,696 feet.

Little Fay Oil Co's. No. 3 Burns is making 40 bbls. on the pump in sand at 2,618-20 feet. Magnolia Co's. No. 3 LeCroy, Section 17-16-15 is coring at 2,645 feet. Its No. 4 Hatfield, Section 7-16-15, is pumping 105 bbls from the sand at 2,570-75 feet. A rig is up for No. 6 Hatfield. Its No. 3 Hessler, Section 8-16-16, is drilling at 900 feet. Mazda Oil Corp's. No. H-3 Lawton, Section 10-16-15, is drilling at 2,510 feet. Mazda has a rig up in the SW cor. NE SW, Section 10-16-15, for R-6 Lawton. McGaha and associates' No. 1 Haney, Section 11-17-16, tested dry at 2,150 and is drilling ahead at 2,220 feet.

Murdock and associates' No. 2 Vestal, Section 17-16-15, is drilling at 2,446 feet. Their No. 8 Vestal, Section 17-16-15, is a 50 bbl. pumper, making 5 per cent salt water in sand at 2,670-86 feet.

Arranging to Deepen

Natural Gas & Fuel Co. is arranging to deepen No. 2 Flenniken, Section 8-16-15, which was completed as No. 6 Murphy, flowing 4,000 bbls. of clean oil. A rig is up at the well. Its No. A-4 Harrell, Section 17-16-15, has been temporarily abandoned at 2,662 feet. No. A-5 Harrell tested 4,000 feet of gas in sand at 2,761-68 and is shut down for orders. Owens and associates' No. 2 Parks, Section 32-16-16, got a show of oil and gas at 2,120 feet and is resetting the liner.

Leo P. Pukrul's No. 2 Smith, Section 17-16-15, cored salt water sand at 2,380 feet, and is shut down for orders. Pure Oil Co's. No. 6 Bilyew, Section 8-16-15, is drilling at 1,220 feet. Pure Oil Co's. No. 7 Friend, Section 6-16-15, is a location. No. 8 is waiting on a standard rig at 2,545, feet and No. 9 is a derrick. Sam Richardson is drilling out cement at 2,594 feet at No. 5 Lawton, Section 10-16-15. Simms Oil Co's. No. 7 Cook, Section 16-16-15, tested salt water in sand at 2,581-85 feet, and will be deepened.

Smitherman & McDonald are arranging to deepen No. B-2 Saxon, Section 5-16-16, which was completed several months ago at 2,534 feet; when completed it was making an estimated flow of 15,000,000 feet of gas and spraying a little salt water at 1,907 feet. The casing was perforated at 2,250 feet and the hole has 1,500 feet of fluid in it, 75 per cent salt water.

The Sun Oil Co's. No. 8 Hatfield in the SE cor. Section 6-16-15, is a rig. Its No. 2 McClanahan, Section 1-16-16, was drilled to 2,587 feet and the 3½-inch casing is being cemented at 2,578 feet. Sunny Jim Oil Co's. No. 7 Flenniken, Section 9-16-15 is drilling at 350 feet. The Texas Co's. No. 2 McClanahan, Section 12-16-16, is being bailed. Sand was topped at 2,579 feet and penetrated four feet. There is 250 feet of fluid in the hole, 50 per cent salt wter. Thurman and associates set 10-inch at 411 feet at No. 1 Burns, Section 11-17-16. They have abandoned No. 1 Flenniken, Section 17-16-15 at 3.024 feet. Thurman's No. 2 Houston, Section 12-16-16, is waiting for cement to set at 2,556 feet.

Unity Petroleum Co's. No. 7 Roper, Section 3-16-15, is making 35 bbls on the pump at 1,988 feet. Four and one-half-inch casing was cemented at 2,596 feet at Unity Oil Co's No. 2 Lawton, Section

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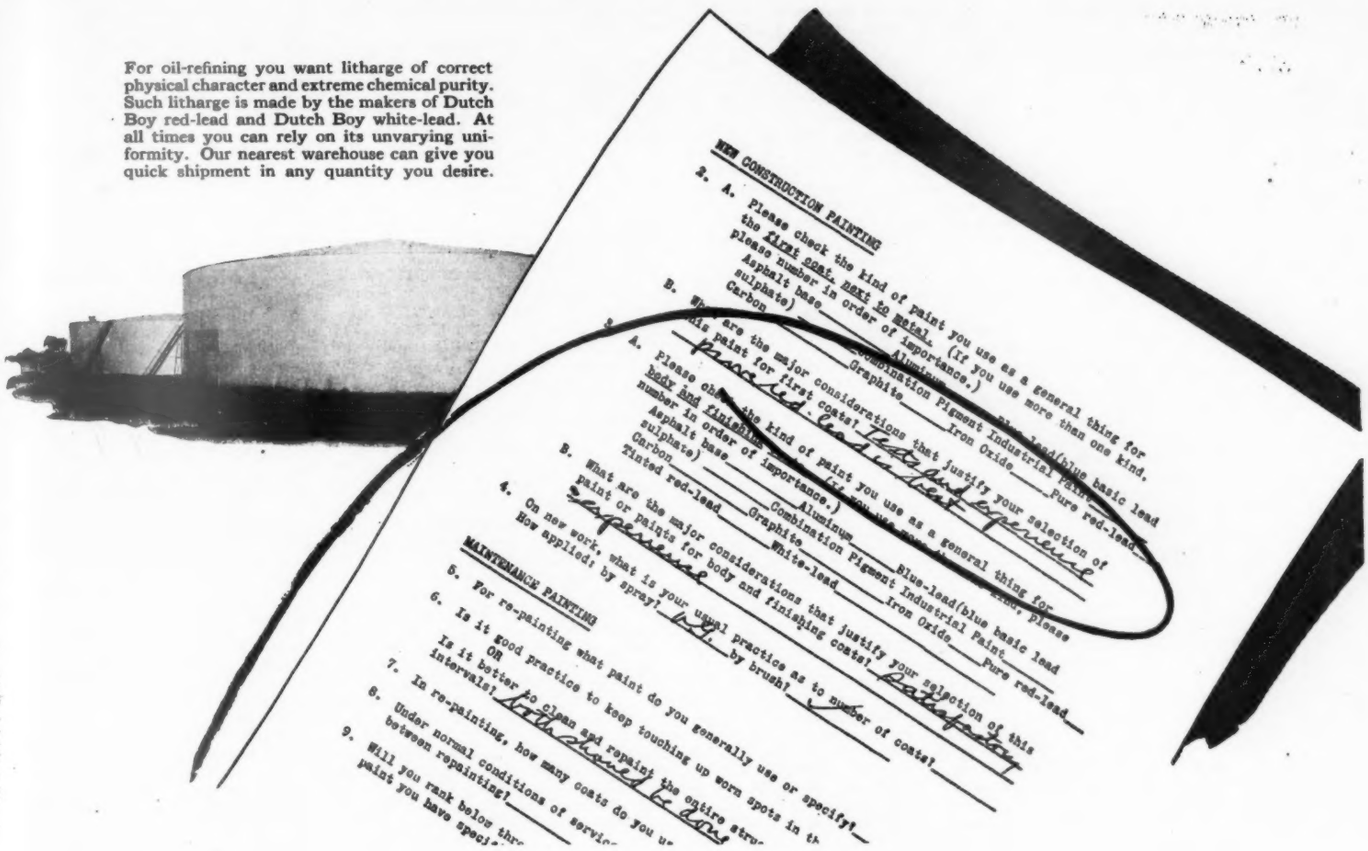
NEW CONSTRUCTION PAINTING
2. A. Please check the kind of paint you use as a general thing for the first coat, next to metal. (If you use more than one kind, please number in order of importance.)
Asphalt base
Carbon
Graphite
Iron Oxide
Pure red-lead
B. What are the major considerations that justify your selection of this paint for first coats?
Proved by test and experience
4. Please check the kind of paint you use as a general thing for body and finishing coats. (If you use more than one kind, please number in order of importance.)
Asphalt base
Carbon
Graphite
Iron Oxide
Pure red-lead
B. What are the major considerations that justify your selection of this paint or paints for body and finishing coats?
Satisfactory
4. On new work, what is your usual practice as to number of coats?
How applied; by spray? by brush?
MAINTENANCE PAINTING
5. For re-painting what paint do you generally use or specify?
6. Is it good practice to keep touching up worn spots in the
Is it better to clean and repaint the entire structure
OR
7. In re-painting, how many coats do you use
intervals?
6. Under normal conditions of service
9. Will you rank below the
between repainting?
paint you have

"Tests and experience prove pure red-lead is best"

A PROMINENT oil publication recently sent a questionnaire to oil men representing every field in the United States. These men were asked what paint they use for priming coats on tank cars, storage tanks, refinery stills, pipe lines, buildings, and field rundown tanks. They were asked why they choose this particular paint.

The replies of 53 oil men to the first question furnishes convincing proof of how generally red-lead is accepted throughout the oil industry. Thirty-two of these men said they use, specify or recommend pure red-lead for priming coats. And these men are employed by oil companies not only in the mid-continent field, but also in Pennsylvania and California.

A few typical comments

Many of these men made interesting comments on their experience with red-lead. Here are a few: ***"Pure red-lead withstands any climatic conditions."*** ***"After many tests we have decided on red-lead."*** ***"Red-lead is durable, economical, and easy to apply."*** ***"Red-lead has always given us excellent results."*** ***"Experience of ourselves and others seems to indicate red-lead."***

—this comment is typical of dozens received in a recent survey of the oil industry

The highest grade red-lead obtainable is Dutch Boy red-lead. You can get it in either the paste or liquid form. The liquid comes in the natural orange-red for first coats, and also in greens, browns, and black for finishing coats. The paste is obtainable in the natural orange-red and may be shaded to any desired dark color.

For light finishing coats

Dutch Boy white-lead on top of an undercoating of Dutch Boy red-lead will give you a light finishing coat that reduces heat absorption and decreases oil evaporation. Like Dutch Boy red-lead, Dutch Boy white-lead has the properties that enable it to resist the attacks of rust-forming elements.

We shall be glad to help you solve any question of metal surface protection. Specialists in our Department of Technical Service have made a study of paint protection for metal in the oil industry. They will be glad to give you any help you may require. Simply address them in care of our nearest branch.

NATIONAL LEAD COMPANY

New York, 111 Broadway; Boston, 131 State Street; Buffalo, 116 Oak Street; Chicago, 900 West 18th Street; Cincinnati, 659 Freeman Avenue; Cleveland, 820 West Superior Avenue; St. Louis, 722 Chestnut Street; San Francisco, 485 California Street; Pittsburgh, National Lead & Oil Co. of Penna., 316 Fourth Avenue; Philadelphia, John T. Lewis & Bros. Co., 437 Chestnut Street.

Dutch Boy Red-Lead

10-16-15. Unity Oil Co's. No. A-8 Bilyew is drilling at 1,600 feet.

Nevada County

Bemis and associates' No. 3 J. D. Ellis, Section 2-14-21, is drilling at 560 feet. Humble Co's. No. 2 T. W. Calloway, Section 10-15-22, topped the Nacatoch sand at 1,225 feet and is cored dry to 1,227 feet. The test was drilled to 1,233 feet and has been temporarily abandoned. The 6⅝-inch casing was cemented at 1,162 feet at Humble Co.'s No. 2 Graves, Section 2-14-21. Its No. 3 Graves, is a rig.

Keystone Co's. No. 8 Waters, Section 10-14-21, reached the top of the sand at 1,210 feet and penetrated it four feet. There is 800 feet of fluid in the hole and the well is shut down waiting on a standard rig. Keystone Co's. No. 9 Waters, Section 11-14-21, is drilling at 400 feet.

The Magnolia Co's. deep test, No. 1 B. F. Johnson, Section 3-15-21, is drilling in a hard sandy lime formation at 4,490 feet. Smitherman & McDonald's No. 3 C. W. Waters, Section 2-14-21, is being bailed to test eight foot of sand topped at 1,155 feet. Straughn & Creason's No. 1 Tidwell, Section 22-13-21, is drilling in shale and shell at 1,103 feet.

Calhoun County

Magnolia Petroleum Co's. Calhoun County wildcat test, No. 1 Calion Lumber Co., Section 29-15-14, is drilling in gumbo at 4,024 feet. Southern Crude Oil Purchasing Co. is to give Calhoun County another play. A rig is up for a test on the Calion Lumber Co.'s lease, 780 feet from the north line and 2,332 feet from the east line in the southwest of Section 1-16-14.

Clark County

Virgil Heath, trustee's No. 1 Arnold, Section 12-9-10, is drilling below the 426-foot level, Whelen Oil Co's. No. 1 Brown, Section 35-10-20, is drilling in hard sand at 2,102 feet.

Columbia County

Hude & Aarnes' No. 2 Brown, Section 13-15-20, cored lime and sand at 3,212 feet. Kentucky-Arkansas Petroleum Co's. No. 1 Peter Doss, Section 29-19-20, is shut down at 1,485 feet while the rig is being repaired. Magnolia Petroleum Co. is cementing the 6-inch casing at 2,154 feet at No. 8 Rhinehart, Section 36-15-20. Pluto Oil Co's. No. 2 Robinson is shut down at 1,000 feet while the 8¼-inch casing is being cemented at 900 feet.

LaFayette County

Two failures were recorded in LaFayette County. Arkansas Fuel Oil Co's. No. 2 Red River Lumber Co., Section 18-19-24, was a hole full of water at 2,811 feet and has been abandoned. Kensaw Petroleum Co's. No. 2 Red River Lumber Co., Section 3-20-24, was plugged at 2,840 feet. Gulf Refining Co. has made a location for its No. 1 Red River Lumber Co., in the SW cor. Section 10-19-24.

Miller County

J. L. Bragden's No. 1 Wiseman, Section 36-15-17, is shut down at 2,710 feet. Buzzard Bluff Co's. No. 1 Munn, Section 22-14-26 is shut down at contract depth in salt water sand at 2,512 feet. Humble Co's. No. 1 Big River Lumber Co., Section 33-17-27, was abandoned at 1,715 feet. Lenze and associates' No. 1 Dale, Section 25-15-26, is drilling in shale at 1,012 feet. Munn Oil & Gas Co. has abandoned the derrick at No. 1 Gillespie, Section 22-14-26.

Scattered Arkansas Wildcats

In Dallas County McNeil and associates have cleaned up a fishing job at No. 1 Owens, Section 29-10-16, and have temporarily abandoned the test at 2,210 feet. In Drew County McClintock & Goodka's No. 1 Olga, Section 35-13-5, cemented the 6-inch at 1,846 feet and then tested fresh water with a show of dead oil. The test is shut down at 1,855 feet waiting on orders. Burton and associates' No. 1 Garland, Section 23-10-25, Hempstead County, is drilling in rock at 1,930 feet. De Cou Oil Co's. Jefferson County test, No. 1 Hinsley, Section 7-3-10, has been temporarily abandoned at 1,830 feet. In Little River County Mellick Oil Co's. No. 1 Hawkins, Section 10-11-31, is drilling in hard sand at 1,751 feet.

Louisiana Operations

Bellevue Field, Bossier Parish

Hanby, trustee's No. 2 Larkin, Section 14-19-11, is drilling at 230 feet. Humble Co's. No. 29 Bliss & Wetherbee, Section 23-19-11, is waiting for cement to set at 335 feet, corrected measurements.

Bossier Parish Wildcats

Arkansas Fuel Oil Co's No. 1 Murray, Section 14-23-14, is drilling at 2,025 feet. Benton Syndicate's No. 1 Bulkley, Section 9-20-13, tested salt water with a small show of oil at 1,182 feet. Palmer Corp's. No. 10 Caplie, Section 25-16-12, is a derrick pattern. Woodley & Collins' No. 1 Kilburn, Section 18-19-13, is drilling in sand rock at 2,112 feet.

Caddo Parish

Caddo Parish finished the week with only three new wells, all small pumpers. Dixie Co's. No. 4 Donovan, Section 21-22-15, was completed for a 12-bbl. pumper at 1,048 feet. Dixie Co. set the 6-inch casing at 1,000 feet at No. 4 Donovan. Its deep test No. 1 Jolly, Section 27-22-15, is drilling in lime at 3,887 feet and No. 71 Robertshaw, Section 14-21-15 is drilling at 2,435 feet. No. 73 Robertshaw, Section 11-21-15, is drilling at 1,350 feet.

H. J. Bussa's No. 7 Allen, Section 23-22-15, was completed for a 10-bbl. pumper at 1,059 feet. His No. 1 Hardeman, Section 24-22-15, is drilling at 500 feet. Arkansas Natural Gas Co's. No. 1 C. W. Lane, Section 13-21-15, is drilling in gas rock at 980 feet. Six-inch casing was cemented at 1,350 feet at Double I. I. O. Co's. No. 5 Wadkins, Section 27-21-15.

Gulf Refining Co's. No. 227 Ferry Lake, Section 16-20-16, has been drilled to 2,289 feet and arrangements are being made to set the liner. Gulf Co's. No. 228 Ferry Lake, Section 22-20-16, is being bailed at 2,155 feet. No. 229 Ferry Lake, Section 15-20-16 is drilling through gas rock at 886 feet. No. 230 Ferry Lake, Section 16-20-16, is a derrick. Gulf Co's. No. 7 J. H. Herndon, Section 15-21-15, is being bailed to test at 1,746 feet. No. 9 Herndon, Section 15-21-15, was completed for a 5-bbl. pumper at 1,700 feet.

Four and one-half-inch casing was cemented at 3,588 feet at Gulf Co.'s No. 17 Lane, Section 13-21-15. No. E-1 Muslow, Section 35-21-15, is drilling through broken sandy lime at 2,145 feet. Gulf Co's. No. 12 Tyson, Section 14-21-15, is drilling through broken sand and rock at 2,223 feet.

Mrs. N. M. Hancock's No. 2 Hampton, 1,163 feet from the south line and 525 feet from the west line of the NE, Section 15-21-15 is drilling at 1,360 feet. Six-inch casing was cemented at 1,430 feet at Lewis Oil Corp's. No. 6 Vespy, Section 15-21-15. Magnolia Co. is moving in a rig for No. 23 Raines, Section 22-21-15. No. 24 Raines, same section is shut down at 1,597 feet waiting on a standard rig. Magnolia Co's. No. 1 Spell, Section 29-21-15, is drilling in hard lime at 2,808 feet. Its No. 1 Wiley Bradford, Section 24-21-15, is going through hard lime at 2,451 feet.

Manie Drilling Co's. No. 1 Cunningham, Section 15-17-14, is drilling at 1,570 feet. O'Dell & Lawton's No. 5 Red Bayou, Section 15-21-15, is shut down at 1,712 feet with 300 feet of oil in the hole and waiting on a standard rig. Same operators are building a derrick for No. 6. The Ohio Oil Co's. Trinity sand test. No. 1 J. S. Ardis, Section 1-21-15, is drilling in lime at 4,000 feet and its No. 18 E. K. Smith, Section 12-21-15, is coring a lime formation at 3,821 feet. Standard's No. 11 J. J. Hart, Section 34-21-16, is drilling through gumbo at 2-372 feet.

The 4½-inch casing was cemented at 1,445 feet at The Texas Co's. No. 23 C. M. L. Co., Section 23-21-15. The 8⅝-inch casing is being run to 2,400 feet at The Texas Co's. No. 42 C. M. L. Co., same section. Its No. 1 Caddo School Board, Section 16-15-12, is drilling in gas rock at 823 feet, and No. B-1, Section 15-20-16, drilling in brown sandy lime at 3,886 feet. The 6-inch casing was cemented at 1,812 feet at The Texas Co's. No. 60 Levee Board, Section 33-21-16, and a derrick is being built for No. 61. Its No. 52 S. P. Harrell, Section 12-21-16, is drilling through gumbo at 1,845 feet.

Claiborne Parish

Standard is arranging to set the liner at 2,063 feet at No. 4 Shaw, Section 30-21-7. Triangle Drilling Co's. No. 1 Cupp, Section 22-23-5, is shut down at 300 feet because of high water. Its No. 1 Keen, Section 7-19-15, is drilling through rock and shale at 3,890 feet.

De Soto Parish

Dixie Co. is underreaming the 6⅝-inch casing to 3,386 feet at No. 1 Jenkins, Section 9-12-11. Carl K. Dresser is moving in a rig for No. 1 Williamson, center of the SE, Section 29-15-14. Gulf Co's. No. A-10 Willis Williams, Section 31-13-11, was abandoned at 2,560 feet. Magnolia Co's. No. 1 Bond, Section 27-12-11, tested dry at 2,628 feet and is to be deepened. The Texas Co's. No. A-10 Wemple, Section 2-12-12, is drilling in shale at 1,985 feet. J. C. Walton's No. 1 Harp, Section 36-12-11, is drilling at 2,565 feet.

Grant Parish

Dowling & McCurry have a rig up in the NE cor. SE SE, Section 18-9-1e, for their No. 1 Swope.

Ouachita Parish

J. M. Huber's No. 7 fee, Section 30-19-5e, is drilling at 1,725 feet. Sam D. Hunter's No. 1 D'Arbone, Section 32-19-3e, is shut down at 2,180 feet for fuel. G. E. Jordan's No. 1 Miller-Roberts, Section 12-18-4e, is drilling at 1,750 feet. Ladell and associates' No. 33 fee, Section 36-19-4e, is drilling at 1,700 feet. Palmer Corp's. No. 2 Kate Cole, in the SE cor. Section 26-20-4e, is a derrick. Palmer Corp's. No. 1 fee, Section 24-19-4e, was completed for a gas well at 2,213 feet and gauged 5,000,000 feet. A derrick is standing for No. 2 fee 1,959 feet from the west line and 1,980 feet from the south line in the NE, Section 24-19-4e. Pioneer Oil & Gas Co's. No. 1 Filihol, Section 11-18-4, is drilling at 2,000 feet. United Carbon Co's. No. 1 Archie, Section 24-20-4e, was completed at 2,190 feet for a gas well and gauged 10,512,000 feet.

Sabine Parish

L. M. Emlet's No. 5 H. L. Bowman Co., Section 9-7-12, is drilling in hard sand rock at 3,245 feet. Toro Petroleum Co.'s No. 1 Pickering Lumber Co., Section 16-20-3e, tested salt water at 1,548 feet.

Webster Parish

The 6-inch casing was cemented at 2,536 feet at the Alabama Petroleum Co's. No. B-1 Robbins, Section 21-21-10. A derrick is standing in the center of the SE quarter of the section for No. B-3. Arkansas Natural Gas Co's. No. 1 Miller in the SW cor. NW, Section 30-23-9, is drilling at 1,000 feet. Doern and associates' No. 1 Bollinger, Section 9-22-11, is drilling at 660 feet.

The Magnolia Co's. deep test, No. 1 Bible, Section 8-20-9, is being delayed by a fishing job at 4,281 feet. The bit was lost in the hole. Magnolia Co's. No. 1 Sexton, Section 32-23-9, is a derrick. Its No. 1 J. Tiner, Section 21-21-10 is drilling in lime at 2,040 feet. Ohio Co's. No. 1 W. Cox, Section 23-21-10 cored dry sand at 4,721 feet. Its No. 6 S. Sidney, Section 16-21-10, is being bailed to test five foot of sand topped at 2,531 feet. Smitherman and McDonald's No. 1 Oakley, Section 29-23-11, is drilling at 700 feet. Tidal Oil Co's. No. 2 Gleason, Section 28-21-10, is a derrick.

Winn Parish

Cedar Creek Petroleum Co's. No. 1 Sullivan, Section 6-10-2w, bailed dry at 778 feet. A rig is up for Cherokee Petroleum Co's. No. 1 Urania, Section 13-11-1e. O. W. Clark's (trustee) No. 3 Harper, NE NE NW, Section 26-10-1e, is a derrick. J. H. Hall's No. 1 Eagle, Section 6-10-2w, is to be tested at 1,050 feet. No showing was found when the Standard's No. 1 E. E. Albritton, Section 27-10-1e, cored three feet of sandy lime at 1,509 feet. Another core is to be taken at 1,535 feet.

Louisiana Wildcat Tests

Buckley & Palmer's No. 1 Davis, Section 12-20-2w, Lincoln Parish, is drilling in gumbo at 1,540 feet. The Texas Co's. No. 1 Tremont, Section 27-18-1w, Linclon Parish, struck a fresh water flow at 728 feet. Arrangements are being made to skid the derrick and start a new hole. Wheeler & Wilbanks are arranging to set the 8-inch casing at 1,300 feet at No. 1 Lanier O. & L. Co., Section 3-4-3e, Rapides Parish. Carnahan & Kyle are moving in a rig for No. 1 Hollingworth, Section 24-12-11, Red River Parish. In Union Parish Arkansas Fuel Oil Co's. No. 1 James Reeves, Section 14-20-1e, is drilling in sand at 2,390 feet and Louisiana Power Co's. No. 1 Thompson, Section 16-20-3e, is shut down while cement is setting at 848 feet.

CANADIAN FIELDS

(Continued from Page 44)

ing this week at 3,258 feet and will be carried down for a test of the Madison limestone in this section of the Turner Valley Field. The Southern Alberta's holdings are in a different portion of the field from the Royalite Oil Co.'s producers. The latter are primarily wet gas producers, with incidental gasoline production, while in the Southern Alberta wells there was relatively little wet gas but a small production of light crude.

High River Fields, Ltd., representing Drumheller, Alta., interests, are arranging to drill a test in the Turner Valley Field. Okalta Oils, Ltd., under the direction of W. S. Herron, has secured some territory and will drill this season. Sentinel Oil Co., under the management of J. F. Moodie of Calgary, will drill on Section 8-20-2w5, adjoining the Royalite's No. 4 gusher. This test is expected to spud in early in April.

Royalite Oil Co.'s No. 5 is reported drilling close to 3,000 feet. Royalite's No. 6 is shut down.

Illinois-Alberta Oil & Refining Co., Section 12-20-3w5, is resuming drilling. The capitalization is being increased from $1,000,000 to $1,250,000 to cover amounts advanced by A. Owen Jennings to finance operations of the company. The shareholders' meeting, held at Calgary recently, elected the following directorate: President, A. Owen Jennings; vice president, George A. Crooks; secretary-treasurer, A. L. Stevens; directors: Charles W. Albers, Granite City, Ill.; Grant L. Jennings,, Black Diamond, Alta.; Sergt. A. Short, Calgary. Roy Widney is in charge of the test, which has already been carried below 3,000 feet with a fair production of wet gas and some shows of light oil. It is planned to carry the test into the Madison lime, finishing with a 4¾-inch hole. The test is now at 3,270 feet with a 6¼-inch hole.

Dallas Oil Co. of Calgary is reported rigging up No. 1 test, a short distance from Royalite's No. 6. This company is also spotting a test in the Moose Mountain district.

In the Irma-Wainwright Field, central Alberta, Edmonton-Wainwright Oils' No. 1, close to the British Petroleum Ltd.'s No. 3-B, is reported down over 600 feet with a rotary test. The plant is operating on gas from British Petroleum's No. 2. Bishop-Norton syndicate is arranging for a test, which will be drilled either close to the British Petroleums, Ltd.'s, wells or in the Baxter Lake area. Wainwright Gas Co., Ltd., is planning to build a pipe line from the Fabyan wells to Wainwright, and will supply gas for domestic and industrial purposes.

In the Irma district, the Edmonton-Wainwright, Oils, Ltd., is drilling on the Irma Oil Development Co. test, Section 28-45-9w4. A rotary plant has been installed for the test, which is in charge of Dave Credille. Irma Oil Development Co. is arranging a franchise to pipe gas to supply Irma.

In the Medicine Hat Field, the Roth Syndicate's No. 1 deep test in the city limits of Medicine Hat has set the 6⅝-inch casing at 2,045 feet to shut off the water, and is resuming drilling. Monalta Oils, Ltd., of Calgary is locating a test in the Sweetgrass district, close to Coutts.

In northern Alberta an American syndicate is reported interested in a project to utilize the McClave process for separating oil from the tar sand deposits of the Athabaska district. The process was tested with 500 tons of tar sands at Edmonton last season, and is stated to have

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MEXICAN FIELDS

(Continued from Page 38)

Maguabes, cemented 8-inch at 1,447 feet in gray lime.

International Petroleum Co.'s No. 266 Lot 5 Cacalilao, is drilling in gray shale at 450 feet; No. 267, same lot, same place, is also at 450 feet in gray shale; No. 268, same lot, same place, drilling in gray shale at 302 feet. Mexican Sinclair Petroleum Corp.'s No. 18, Tananturo, is testing at 1,736 feet in lime, with a showing of 150 bbls.; No. 19, same place, cemented 8-inch at 1,311 feet in lime and shells; No. 11, Lot 1, Camalote, is drilling at 1,771 feet in the San Felipe; No. 12, same lot, same place, drilling in blue shale at 250 feet; No. 8 Gutierrez, drilling in gray lime at 1,690 feet; No. 10, same place, running 8-inch at 1,334 feet in gray lime. Mexican Gulf's No. 3 Piedras, is a derrick; No. 12 Flores, drilling at 350 feet in gray shale; No. 13, same place, drilling at 321 feet, also in gray shale.

Sol Oil Co.'s No. 2 Etienne, is drilling at 300 feet in shale. The Texas Co.'s No. 6 (Isleta) Marques, is drilling in gray lime at 2,280 feet. Transcontinental Oil Co.'s No. 200, Lot 4 Cacalilao, is drilling in lime at 2,060 feet; No. 249, same lot, same place, drilling in gray lime at 1,625 feet; No. 259, same lot, same place, fishing drill stem at 2,100 feet in lime; No. 261, same lot, same place, drilling at 720 feet in gray shale; No. 267, same lot, same place, drilling in gray lime at 1,660 feet; No. 58, Paciencia, drilling in lime at 2,320 feet; No. 11 Piedras, drilling in shale at 380 feet; No. 23, Lot 1 Tanchicuin, drilling at 1,305 feet in gray lime, with a showing of oil; No. 22 Barberena, is fishing for bailer at 1,130 feet in shells; No. 4 Peralta cemented 8-inch at 1,390 feet in gray lime. Veracruz Mexican Oil Co.'s No. 9 Buena Vista, is fishing for underreamer at 1,150 feet in the San Felipe. Explotadora de Riqueszas Cia. is drilling No. 1 Riqueza, in Buena Vista at 685 feet in shale. D. Williamson's No. 1 Tampuche has cemented 8-inch in gray lime at 1,630 feet.

Northern Miscellany

A resume of drilling operations in the miscellaneous Northern Fields may be summarized as follows: American International Fuel Co.'s No. 21 Los Esteros, is drilling at 3,335 feet in white lime; No. 26, same place, is drilling in shale at 361 feet. Corona Petroleum Co.'s No. 20, Lot 6 Corcovado, is drilling in gray lime at 2,150 feet; No. 21, same lot, same place, cleaning out re-cement at 1,185 feet in the San Felipe; No. 22, same lot, same place, drilling at 1,735 feet in the San Felipe. This well had a showing of gas at 1,700 feet. Cia. Pet. Financiera cemented 8-inch on No. 2, Lot 14, Paciencia de Aguacate, at 1,438 feet in gray lime and shells. Franco Espanola Pet. Cia.'s No. 44 Limon, is drilling at 1,720 feet in gray lime; No. 45, same place, drilling at 1,117 feet in gray shale; No. 47, same place, is down 1,445 feet in gray lime and is rigging standard; No. 49, same place, is drilling at 1,230 feet in blue shale; No. 50, same place, is rigging. India Oil Co.'s No. 1 Rayon, is ready to spud in. International Petroleum Co.'s No. 1 Tanceme is down 5,000 feet in the Papagallos, waiting on orders. Mexican Petroleum Co.'s No. 59, at Chapacao, is drilling in gray lime at 1,330 feet; No. 42 Chijol, drilling at 2,067 feet in gray lime, with the hole full of oil and water; No. 55, same place, drilling in gray shale at 520 feet; No. 5 Silva, cemented 8-inch at 1,300 feet in gray lime; No. 69 La Dicha running 10-inch at 1,185 feet in gray lime; No. 70, same place, is drilling at 910 feet in blue shale; No. 76, same place, fishing for bit at 2,110 feet in gray lime; No. 82, same place, is running 10-inch at 1,187 feet in white lime; No. 84, same place, drilling at 60 feet in yellow clay; No. 9 Midway, drilling in blue shale at 910 feet; No. 10, same place, drilling in gray shale at 970 feet; No. 17 San Pedro drilling at 720 feet in blue shale, No. 18, same place, landed 10-inch at 1,202 feet in brown shale; No. 19, same place, drilling at 1,165 feet in gray shale and lime. Mexican Gulf Oil Co.'s No. 24 Chapacao, recemented 8-inch at 1,430 feet in gray lime; No. 34, same place, drilling at 1,758 feet in gray lime and showing 50 bbls.; No. 35, same place, drilling at 2,050 feet in gray and brown lime. The Mexican Eagle's No. 1 San Pedro is down 4,812 feet, waiting on fuel. National Lines continued drilling on its Chapacao right of way. Its No. 27 Chapacao is at 1,670 feet in gray lime; No. 32, same place, is 1,335 feet in gray lime.; No. 34, same place, drilling in gray shale at 470 feet; No. 38, same place, drilling in gray shale at 680 feet; No. 39, same place, drilling in red shale at 95 feet; No. 27 W. Maguabes (Panuco) cemented 8-inch at 1,200 feet in shells, and is rigging standard; No. 42 Tanchicuin cemented 8-inch at 1,300 feet in gray lime; No. 31 Limon cemented 8-inch at 1,836 feet in lime shells and shale; No. 34 La Mula (Topila) cemented 8-inch at 1,550 feet in gray lime. Richmex Oil Co.'s No. 1, Lot 20, Altamira, is drilling in the Tamasopa lime at 2,522 feet. Transcontinental Oil Co.'s No. 27, Lot 6 Corcovado, cemented 8-inch in the San Felipe at 1,317 feet. The Texas Co.'s No. 4 San Martin, Paciencia de Aguacate, is drilling at 200 feet in shale. Venable and others cemented 8-inch at 1,714 feet in the San Felipe on No. 32 Caracol. At the same place it's No. 33 is already rigged.

An addendum must be made to the drilling operations in the southern fields that the Mexican Eagle Oil Co., Ltd., is drilling No. 35, Cerro Viejo, at 610 feet in gray shale.

GULF COAST

(Continued from Page 38)

The Gulf Production Co.'s No. 165 Wing is pumping 10 bbls. at 1,150 feet and the Acorn Oil Co. has a 10-bbl. well in No. 60 Paraffin. The Paraffin Oil Co.'s No. 65 feet is good for 10 bbls. at 1,060 feet. The Sterling Oil Co.'s No. 3 Hooks is bailing at 1,700 feet.

The Kirby-Capitol Oil Co.'s No. 4 Hodges in the deep sand section is drilling around 3,600 feet. In the old part of the district, the East Batson Oil Co.'s No. 12 State land is drilling below 1,045 feet. The Ada Belle Oil Co.'s No. 108 Bradley is drilling deeper at 766 feet.

In the South Lake Pool, The Texas Co.'s No. 264 fee was worked over into a 30-bbl. well at 1,800 feet. J. S. Jackson, trustee's, No. 14 Carpenter is bailing at 1,475 feet.

The Texas Co.'s No. 230 fee there is working over. The Minor Oil Co.'s No. 75 fee is around 900 feet. The Yount-Lee Oil Co.'s No. 3 Gilbert is drilling at 2,314 feet. Barkley Oil Co.'s No. 1 Bailey is drilling around 1,675 feet. The Lake View Oil Co.'s No. 47 Hardin is rigging, as is the Humble Oil & Refining Co.'s No. 2 Myers and the Humphrey Corp.'s No. 1 Griffith. The latter has made locations for Nos. 2 and 3 Griffin.

In the Saratoga Pool, the Vacuum Oil Co.'s No. 3 Teel, southwest of the district and practically a wildcat, is drilling around 1,875 feet. The Rio Bravo Oil Co.'s No. 3 Fountain, on the north side, is below 3,235 feet. The San Bernard Oil Co.'s No. 19 Hooks is drilling around 1,875 feet.

Fort Bend County Pools

At Blue Ridge, the Gulf Production Co.'s No. 6 Luscher is drilling deeper at 3,410 feet. The Texas Co.'s No. 10 Robinson on the west side of the salt mass, is doing the same at 3,387 feet.

At Big Creek, the Gulf Production Co.'s No. 10 Wheat is drilling around 2,300 feet. The same company's No. 28 Davis is rigging with a location made for No. 29 Davis. The Union Sulphur Co. has abandoned Big Creek as a sulphur prospect. The company drilled 41 wells and erected a battery of boilers to melt the sulphur with superheated steam and pump it to the surface, but the output was not deemed sufficient to justify continued operations.

In the Nash-Wisdom district on the line of Fort Bend and Brazoria Counties, where the Rycade Petroleum Corp. has one well on some 11,000 acres, it abandoned No. 4 Wisdom at 2,682 feet. It is drilling No. 6 Nash on the Brazoria County side of the line at 1,677 feet. Casing was set in No. 7 Nash at 1,165 feet. On the Fort Bend County side of the line, where No. 4 Wisdom went into a cavity, it is drilling No. 2 Flessner around 2,765 feet and No. 3 Flessner is a location.

At the Orchard Dome, northwest of Rosenburg, where the Gulf Production Co. likewise has one well on more than 10,000 acres, it is drilling No. 6 Moore ranch at 1,235 feet. The one producer is No. 5 Moore and it was located in a swamp or shallow lake, which has been drained to facilitate development work. Oldtimers are displeased over draining the lake and complain that a good duck shooting spot was destroyed. Thus the march of progress interferes with pleasure. The Goose Creek Pool has practically killed the fishing in the bays adjacent to the district and bilge from the tankers making Galveston, Texas City and Houston is polluting the water of the bays and shores of the Gulf of Mexico and threatens to ruin the beach bathing.

Harris County Pools

At Goose Creek, the Gulf Production Co. is putting No. 11 Chapman-Bryan on air at 4,350 feet. The Sun Oil Co.'s No. 18 Bartlett-Smith is bailing at 1,040 feet, as is the Gulf Coast-Crown Central Oil Co.'s joint No. 6 Galliard at 3,420 feet. It is a worked-over hole.

The Gulf Production Co. is deepening No. 21 Beaumont, No. 5 Wright and No. 12 Galliard fee and preparing to deepen No. 8 State land. No. 5 Hirsch is drilling at 2,410 feet.

The Humble Oil & Refining Co.'s No. 9 Smith is being rigged to deepen. No. 67 Smith is at 1,890 feet and No. 68 at 2,135 feet. No. 23 Peninsula is around 3,600 feet. The Powell Oil Co.'s No. 6 Bryan is pulling the screen at 4,510 feet. The M. & B. Co.'s No. 4 Scorrgea, northwest of production, is drilling around 1,900 feet.

In the Humble Pool, the Cardinal Oil Co.'s No. 1 Hancock will make a 200-bbl. pumper at 1,100 feet. It is north of Moonshine Hill in old territory. Wells drilling in the pool include Sutherland and others' No. 2 Weed, R. L. Blaffer's No. 31 Duman, F. M. Long's No. 2 Hirsch, J. D. Clay's No. 10 Invincible, A. L. Fondren's No. 2 Mason and Johnson and other's No. 1 Morris, a workover. The Southern Petroleum Co. is working over old wells on its Landslide lease and increasing the output.

At Pierce Junction, the Navarro Oil Co. has started No. 2 Cain and the Gulf Production Co. is rigging No. 9 Taylor to work over. The Rio Bravo Oil Co. set casing in No. 2-P Settegast at 4,616 feet. It is on the west side of the salt mass, or core.

Brazoria County

In the West Columbia Pool, the Humble Oil & Refining Co.'s No. 2 Smith is pumping 10 bbls. at 3,475 feet. The same company's No. 1 De Rubues is drilling around 3,765 feet. The Texas Co.'s No. 22 Arnold is drilling at 3,618 feet and the Hyde Production Co.'s No. 1 Masterson is at 2,910 feet.

Other Pools

At High Island in Galveston County, the Gulf Production Co.'s No. 1-A Smith was abandoned at 3,200 feet. The Transbay Oil Co.'s No. 14 Carter was abandoned and No. 15 Carter is drilling around 200 feet. The Sun Oil Co.'s No. 8 Cade is drilling below 975 feet, with derricks standing for Nos. 7 and 10 Cade.

On the southeast side of Spindletop, the Yount-Lee Oil Co.'s No. 4 McFaddin is at 3,375 feet and No. 2 Gladys on the north side is at 455 feet. Gulf Production Co.'s No. 221 Gladys is around 677 feet. The Lillian Oil Co.'s No. 3 Terrell is at 910 feet.

Liberty County Pools

The Humble Oil & Refining Co.'s No. 20 Guedry, on the south side of the dome in the Hull Pool, is flowing 400 bbls. at 2,975 feet. Its No. 6-A Abel on the west side is bailing at 875 feet. The Mecom Oil Co.'s No. 8 Taylor on the northwest is bailing at 3,477 feet and the Gulf Production Co.'s No. 64 Phoenix around to the southeast flank is preparing to be put on the jack at 3,325 feet.

The Gulf Production Co. is deepening No. 13 Phoenix, No. 12 Scarbrough and No. 5 Thomas fee, the latter being below 4,150 feet. No. 65 Phoenix is at 3,406 feet and No. 66 around 3,235 feet. No. 16 Baldwin is drilling around 3,000 feet. The Republic Production-Houston Oil Co.'s joint Nos. 119, 121 and 122 on the Dolbear on the east side, are drilling, with a derrick standing for No. 120. The Yount-Lee Oil Co.'s No. 9 Stengler is at 2,980 feet. The Texas Co.'s No. 1 Hannah is below 2,800 feet and No. 10 Merchant is fishing at 3,700 feet. The Empire Gas & Fuel Co.'s No. 18 Barngrover is around 3,200 feet. The Humble Oil & Refining Co.'s No. 21 Guedry is drilling at 615 feet. No. 3 Sterling is at 2,090 feet. A location has been made for No. 5 Merchant.

The Harrison Oil Co.'s No. 1 Schlender on the southwest side of the North Dayton Pool was abandoned at 3,298 feet and a location made for No. 2.

The Humble Oil & Refining Co. is rigging No. 2 Welder on the west side of the South Liberty Pool on the opposite side of the Trinity River. High water has delayed starting work.

Orange Pool

The Humble Oil & Refining Co.'s No. 25-A Chesson in the center of the Orange Pool bailed salt water at 4,900 feet. The Rycade Petroleum Corp.'s No. 11 Cow Bayou, which came in last week as a 2,500-bbl. well at 4,650 feet, is flowing 550 bbls. The Texhoma (Continental) Oil Co.'s No. 7 Chesson will pump at 3,050 feet. The Orange Petroleum Co.'s No. 1 Williams is bailing at 4,150 feet and the Brownie Babbittee Oil Co.'s No. 4 McLean is running bailer at 3,425 feet. The Edgerly Petroleum Co.'s No. 4 Carbello is drilling at 2,300 feet. The Humble Oil & Refining Co.'s No. 5 Myers will pump at 3,320 feet. The Kishi Development Co.'s No. 7 McQuire is drilling at 4,810 feet. The Orange Petroleum Co.'s No. 11 Chesson is drilling at 4,860 feet. The Rycade Petroleum Corp.'s No. 6 State "B" is drilling at 4,395 feet; No. 2 is rigging up to work over; No. 5 is a location. The Supreme Oil Co.'s No. 4 Jackson is drilling at 4,215 feet. The Atlantic's No. 4 Hager is drilling at 3,325 feet. The Texhoma Oil Co.'s No. 4 Chesson is pulling strainer at 4,715 feet; No. 7 will pump at 3,050 feet; No. 10 is drilling at 4,600 feet; No. 14 shut down at 4,750 feet. The Gulf Production Co.'s No. 9 Kishi-Lang "B" is rigging up; No. 21 Lee Hager fee is drilling at 3,510 feet; No. 22 is drilling at 2,850 feet; No. 3 Chesson "A" is drilling at 4,400 feet; No. 3 Hager fee is milling at 4,600 feet.

South Louisiana Pools

There are now five producers in the Lockport district, near Lake Charles, La. These include Vacuum-Gulf Co.'s No. 1 Miller, the discovery well; No. 3 Miller. No. 4 Miller, No. 2 Friedberg & Wolf and No. 2 Bordages. No. 4 Miller is the best well, averaging 1,775 bbls. per day. No. 2 Friedberg & Wolf is making 400 bbls. by heads, 15 per cent water. A new rig is moving in to deepen No. 1 from 2,500 feet. No. 3 Farquhar is drilling around 2,134 feet.

On the Miller acreage, No. 5 is milling at 4,425 feet, No. 6 is drilling around 4,470 feet, No. 7 around 2,235 feet, No. 8 around 2,700 feet and No. 9 below 3,200 feet.

In the Vinton Pool, the Edgerly Petroleum Co.'s No. 6 Vincent is a 25-bbl. well at 3,275 feet. The Vinton Petroleum Co.'s No. 7 Vincent bailed salt water at 2,890 feet. The Gulf Refining Co. of Louisiana's No. 65 G. N. G. was abandoned as a dry hole at 2,500 feet.

The Gulf Co.'s No. 37 Star is drilling below 3,455 feet and No. 1-A F. H. Gray is around 345 feet. Marrs McLean's No. 10 Gray is at 545 feet. The Texas Co.'s No. 1-A Gray is drilling around 4,010 feet and No. 15 Gray is shut down. The Vinton Petroleum Co.'s No. 18 Rescue is below 1,345 feet and No. 55 Gray is at 655 feet. The Vinton Oil Syndicate's No.

1 Moody is around 2,200 feet. Eichel-Barger's No. 2 Vincent is at 2,100 feet.

In the Edgerly Pool, the Gulf Refining Co.'s No. 24 Bright-Penn is rigging to drill deeper. The Edgerly Petroleum Co.'s No. 1 Hunter is around 3,025 feet.

In the Jennings Pool, The Texas Co.'s No. 1-C Latrielle is shut down. The Port City Oil Co.'s No. 5 S. F. S. is around 1,245 feet. The Jennings Petroleum Co.'s No. 2 S. F. S. is around 875 feet. The Coastal Oil & Fuel Co.'s No. 91 fee is drilling below 1,565 feet.

In St. Mary Parish, the Rio Bravo Oil Co.'s No. 1 Glenwild is below 3,570 feet.

The Rycade Petroleum Corp.'s No. 1 Atchafalaya in St. Martin Parish is rigging.

Emlet and others abandoned No. 6 Bowman-Hicks Lumber Co. lands in Sabine Parish at 3,710 feet and is rigging No. 7.

In Cameron Parish, the Pure Oil Co. is starting No. 3 Sweet Lake in the northwest corner of Section 12-13s.

The Union Sulphur Co. is drilling No. 10 Premier in St. Mary Parish and No. 1 Naval Stores in Calcasieu Parish.

Coastal Texas Wildcats

In Brazoria County, the Roxana Petroleum Corp.'s No. 1 Clements Prison Farm is at 4,090 feet. No. 2 Allen is at 2,545 feet. No. 1 Kropp is plugging back to 578 feet from 589 feet for another test. This test is near Hinckle's Ferry on the Brazos River, 16 miles south of West Columbia and is considered a new dome. No. 1 Kropp showed oil at a shallow depth.

In Chambers County, W. C. Moore's No. 1 Drought is at 665 feet. It is a formation test 1 mile northeast from No. 2 Blecke, another formation test.

At Long Point in Fort Bend County, the Gulf Production Co.'s No. 8 Davis is around 3,465 feet. Pennington and others are drilling in the northwest part of the county. Neiland, Inc.'c No. 2 Fredericks is shut down.

In Harris County, The Texas Co.'s No. 6 Warren at Hockley Dome is around 3,100 feet and No. 7 is at 1,465 feet. Armstrong and others have a location for No. 2 near Peggy Lake.

In Jefferson County, the Gulf Production Co.'s No. 1 Burrell is around 3,200 feet at Fannette Dome. The Houston Oil Co.'s No. 4 Sun-Davis is at 3,651 feet and No. 1 Sun-Davis is at 3,132 feet. These are at Big Hill Dome.

In Matagorda County, the Rycade Petroleum Corp. is rigging No. 1 Kountz near Markham and the Shephard Mound Oil Co.'s No. 2 Hawkins is around 3,000 feet. The Gulf Co. has a location for No. 4 Craig there.

Another Dome

The Gulf Production Co. is reported to have discovered another dome at what is known as Benner Hill in Orange County, across the Neches River and 3 miles east of Beaumont. Geophysical explorations were followed by formation tests that indicate dome formations. An effort will be made to define the extent of the dome.

In Goliad County, the Houston Oil Co.'s No. 1 Pettus is drilling around 2,800 feet. No. 1 Parks is at 2,210 feet.

In Refugio County, Houston Oil Co.'s No. 1 O'Connor ranch is around 3,516 feet. The rock pressure in the Refugio gas fields is decreasing. The pressure at one well there fell off 50 pounds in 30 days.

In Victoria County, the Houston Oil Co.'s No. 1 O'Connor is at 3,210 feet.

In Wharton County, J. W. Rich's No. 2 Brown, 12 miles west of the Boling Pool, is drilling around 890 feet. No. 2 Dennis has been spudded in.

KANSAS FIELDS

(Continued from Page 34)

No. 1 Evans, C SW SW SW, Section 7-22-10, and the Theta Oil Co. had a rig in place for its No. 9 Pixlee, C NE NE NW, Section 9-22-10. Davis Hazlett was rigging up No. 14 DeMalhorie, C NW SE NE, Section 12-22-10, and had a rig on the ground for No. 15, C NW NW SE, same section.

The Manhattan Oil Co's. No. 4, C NE NW NE, Section 12-22-10, was abandoned at 1,095 feet because of a bad fishing job. The same concern completed its No. 5, C SE NW NE, same section, for 250 bbls. after a 240-quart shot in sand at 2,012-83 feet. The Phillips Petroleum Co's. No. 6, C NE NE SW, was drilling at 556 feet. The Prairie Oil & Gas Co's. No. 1 Fletcher, C SE NW NW, was rigging up, and the White Eagle Oil & Refining Co's. No. 2, C SE SE NW, Section 12, was drilling below 300 feet.

Pryor & Lockhart were drilling their No. 6, C NE NE SE, Section 13-22-10, at 1,160 feet. The Neely Oil & Gas Co. was rigging up its No. 1 Brown, C NW NW SE, Section 27-22-10, and The Texas Co. spudded its No. 5, CNL NW NE SW, Section 29-22-10. In the same section, the Tidal Oil Co. completed a 250-bbl. well as a result of a 180-quart shot. It was No. 7, C E half NW NW, and the sand record was 2,326-2,404 feet, total depth 2,407 feet. A rig was also on the ground for No. 8 Prather, C W half NW, same section. The Tidal's No. 12 Prather, C N half NW, Section 29-22-10, was shot with 180 quarts and completed for 200 bbls. in sand at 2,318-83 feet. A rig was being built for No. 13 Prather, C NW, Section 29. No. 17 C NE NW, Section 29, was a completion good for 250 bbls. in sand at 2,303-49 feet. It had been shot with 120 quarts. No. 20, CSL SE NW, was drilling at 600 feet. The Tidal's No. 22, CEL NE NW, Section 29-22-10, was shot with 40 quarts and made 40 bbls. from sand at 2,297-2,307 feet. It had sandy shale at 2,307-20 feet and total depth was 2,375 feet, but the hole was plugged back to 2,325 feet. The Tidal Oil Co's. No. 3 Nichols, CEL, NW, Section 30-22-10, was rigged up.

The Skelly Oil Co. had a rig building for No. 3 Hartley, C NE NW NW, Section 1-23-9. The Greenland Oil Co's. No. 8, C SE NW NW, Section 2-23-9, was shot with 80 quarts and made 150 bbls. in sand at 2,395-2-424 feet. Murphy's No. 1, C NW NW NW, Section 14-23-9, was a 200-bbl. completion following a 100-quart shot in sand at 2,260-2,313 feet.

Darby & Simmons abandoned their No. 5; SW SE SE, Section 36-23-9, as dry at 2,310 feet.

Syndicate's No. 1, C SE NW NW, Section 20-23-10, was dry and abandoned at 2,490 feet. The Mid-Kansas Oil & Gas Co. shot its No. 15, C SW SW NE, Section 23-23-10 with 100 quarts and the result was a 25-bbl. well. Sand was found at 2,042-98 feet, first oil at 2,098-2,113 feet, and total depth 2,116 feet, plugged back to 2,113 feet.

Roth & Faurott and the Mississippi Valley Oil Co. completed their No. 6, CSL SW NE NE, Section 27-23-10, for 30 bbls. natural from sand at 2,214-33 feet. The same interests' No. 43, C SE SW SW, Section 28-23-10, was good for 30 bbls. after a 90-quart shot in sand at 2,267-2,332 feet. Oil pay was at 2,290-2,324 feet. A rig was up for their No. 23, C NW SW SE, Section 29-23-10.

Other Operations

The White Eagle Oil & Refining Co spudded its No. 1 C NW NW NE, Section 4-23-11. The Pulaski Oil Co's. No. 7, C SW SE NE, Section 8-23-11, was drilling at 750 feet.

The Empire Gas & Fuel Co's. No. 11, C NE SW NE, Section 11-22-11 was shot with 180 quarts in sand at 1,800-75 feet and made 75 bbls. First oil was found at 1,830 feet. The Empire's No. 8, C SW NE NW, Section 14-22-11, was abandoned at 1,775 feet because of a bad fishing job and No. 9 in the C SE NW NE, same section, was drilling below 600 feet, while No. 7 in the C SE NW NW, same section, was spudding. The same company's No. 6 Pees, C SW SE NE, Section 15-22-11, had a rig up.

The Mid-Continent Petroleum Corp. was drilling at 500 feet in its No. 9, C NE SE SW, Section 18-22-11. The Selby Oil & Gas Co. completed its No. 2, C SE NW NW, Section 19-22-11, in broken sand at 2,057-84 feet using a shot of 40 quarts. The initial production afterward was 20 bbls. The York State Oil Co. was drilling its No. 2, C SW SE NW, Section 32-22-11, at 600 feet, and

(Continued on Page 129)

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FOR SALE — Land and royalty, 40 acres improved Okmulgee County, Oklahoma, SW¼ of NW¼ 7-13-14, several producing wells. Box B-205, The Oil and Gas Journal, Tulsa, Okla.

ROYALTIES—PRODUCTION

BONA FIDE PURCHASERS

Will sell offset royalty interest to a producing well making about 30 bbls. daily; initial production 240 bbls. daily (shallow sand) in Okfuskee County, Oklahoma. If taken at once, priced right. Address A. J., P. O. Box 451, Tulsa, Okla.

PRODUCING
OIL ROYALTIES
Kansas, Oklahoma, Texas, Louisiana and Arkansas
BOUGHT and SOLD
Inquiries Invited
J. G. REAVES & CO.
Royalty Dealers Exclusively
St. Anthony Hotel
San Antonio, Texas

F. P. BOWEN
Tonkawa, Oklahoma
Dealer in producing and non-producing royalties, settled or flush production.

TEXAS PANHANDLE

Royalties in large or small units to suit any size buyer in fastest growing and most rapid developing oil field in middle west. Write for list of offerings. B. O. Taylor, 306 Blackburn Bldg., Amarillo, Tex.

J. F. MARION COMPANY
Magnolia Building
Dallas, Texas
Buys and Sells
Texas Royalties
"Ask Us First"

EQUIPMENT WANTED

WANTED—Gas or vacuum pumps, size not less than 14x16; must be in excellent condition. Give price and where can be inspected. Address P. O. Box 123, Tulsa, Okla.

We are in the market for
Salvage Pipe
Any amount—Anywhere
ACME PIPE & SUPPLY CO.
Corsicana, Texas

WANTED—To purchase for cash one complete rotary drilling outfit, must have number five Union Tool, 20-inch Johnson or 20-inch Imperial Rotary with heavy draw works. Box B-202, The Oil and Gas Journal, Tulsa, Okla.

FOR SALE—EQUIPMENT

FOR SALE
Three 100-ton ball horizontal refrigerating machines.
One 200 h.p. Twin Duplex Western Gas Engine.
One 160 h.p. Rathbun-Jones Vertical Gas Engine.
Four steam-driven Westinghouse Air Compressors.
This equipment is in good condition and priced right. For further particulars address
DEVONIAN OIL CO.
Box 1441 Phone 6221
Tulsa, Okla.

FOR SALE—Two new Norwalk steam driven gas or air compressors, tandem compound, steam cylinder 12x12, gas cylinder 5½x12, 12x12 being two-stage heavy duty type. Address Chas. C. Jones, 1003 W. Okmulgee St., Muskogee, Okla. Phone 3679-W.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

CLASSIFIED WANTS

CREATE AND BUILD BUSINESS

MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

CRAGO CUT GEARS
Worthy of your confidence. General machine work. 1416 Walnut. Kansas City, Mo. Phone Harrison 7660.

CASING AND LINE PIPE
We buy and sell.
Let us figure with you.
ELLIOTT MACHINE & SUPPLY CO.
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FOR SALE
25,000 FEET 6⅝-inch 20-lb. once-run casing, priced right. Wire or phone
DIAMOND PIPE & SUPPLY CO.
Lamar 4947 Fort Worth, Tex.

WILL SELL nearly complete string of standard drilling tools at a 50 per cent discount. List furnished on application. F. J. Baroch, Box 712, Rawlins, Wyo.

FOR SALE
Fully equipped machine shop for oil country work, including buildings, 26 Bridgeford tool lathe, shaper, drill press, steam hammer, boiler, oil engine, No. 12 pipe machine, necessary cranes and small tools. Equipment new when installed at Gridley, Kans., 1923. For sale on account of ill health. For further information communicate with the Western Drill Tool & Supply Co., Ohanute, Kans., Phone 480.

USED LINE PIPE FOR SALE
35,000 feet 2½-inch
50,000 feet 3 -inch
75,000 feet 4 -inch
50,000 feet 6 -inch
For immediate shipment from our Texas yards.
KEYSTONE PIPE & SUPPLY CO.
315 W. T. Waggoner Bldg.,
Fort Worth, Texas

FOR SALE
Bucyrus 30-B Diesel driven cat. shovel. Marion 37 electric driven cat. shovel. 100 flat cars, 80,000 cap., 37 feet, like new. A. V. Konsberg, 312 S. Clark St., Chicago, Ill.

We buy and sell
Casing, Line Pipe and Supplies.
Let us figure with you.
LEE MORRISON SUPPLY CO.
Bartlesville, Oklahoma

FOR SALE — Ingersoll-Rand steam-driven compressor; size 24x16¼x30; has been in use, but in first-class condition. Write, phone or wire H. Harrison, 212 Mercantile Bldg., Oklahoma City, Okla Phone M-0281.

DRILLING MACHINES FOR SALE
Machines and rigs ranging in sizes from No. 4 Keystone to Standard rigs for sale, also a large stock of drill tools of every size and description. Write or wire us for prices. Sewell Well Co., 1627 Locust St., St. Louis, Mo.

FOR SALE—Two 85-h.p. Watt Miller direct connected vacuum pumps on foundations; 2½ miles north of Elgin, Kans.
THE ROTH GASOLINE CORP.
Independence, Kans.

FOR SALE
Second-hand pressure stills suitable for storage purposes. Length 30', diameter 10', weight about 27,000 lbs., capacity 18,600 gallons. Steel riveted and welded. Manhole-top 20", end 24", bolted manhole cover. Price $400 each, f.o.b. cars, Neodesha, Kans.
THE STANDARD OIL CO. (Kans.)
Phone 236 Neodesha, Kans.

USED CASING
For Sale
200 ft. of 50-lb. 12½" at $2.00 per ft.
600 ft. of 32-lb. 10 " at $1.50 per ft.
1,100 ft. of 24-lb. 8 " at $1.00 per ft.
1,800 ft. of 17-lb. 6⅝" at 80c per ft.
JACK H. POWERS
Decatur, Illinois.

DOGS—POULTRY

PEAFOWL pheasants, bantams, pigeons, wild geese, ducks, breeding stock hatching eggs, free circular. John Hass. Bettendorf, Ia.

BEAUTIFUL registered bull pups $15 Bulldogs, 501 Rockwood. Dallas, Tex.

INCORPORATIONS

DELAWARE incorporators. Charters fees small, forms. Charles G. Guyer, 901 Orange St., Wilmington, Del.

FOR SALE—REFINERIES

FOR SALE
Complete 6,000-bbl. refinery, West Tulsa, Okla.; brick and steel construction, with car repair shop and loading rack capacity for 50 cars; total steel storage 430,000 bbls.; 140 acres of fee land and 22 tenant cottages. This refinery can be bought at a low price and on reasonable terms. Box B-225, The Oil and Gas Journal, Tulsa, Okla.

PUBLIC SALE—Interstate Refineries Incorporated. Refinery at Ranger, Tex., April 16. Filling stations and refinery at Kansas City, May 14. For information see James B. Nourse, trustee, 707 Gloyd Bldg., Kansas City, or Fred S. Hudson, trustee, 526 Lathrop Bldg., Kansas City, Mo.

MONEY RAISING

DEPENDABLE
FINANCING SERVICE
Results sure, swift, economical. Employ the One Great Plan—the plan that gets money. Avoid abortive "mail order" and "phony" broker schemes. Describe proposition. Hansel Financing Specialists, 212-GE Earlham St., Pittsburgh, Pa.

RAISE CAPITAL
Through the sale of securities in your corporation. Twenty-five years' experience behind plan.
NORTHCLIFFE CORPORATION
25 West 43rd St., New York, N. Y.

DO YOU NEED MONEY for organizing or financing oil or mining deals? Write 117 E. 10th, Oklahoma City, Okla.

POSITION WANTED

ENGINEER — Experienced in design and testing, desires position with Mid-Continent company. Box B-206, The Oil and Gas Journal, Tulsa, Okla.

A-1 ACCOUNTANT, thoroughly capable taking charge sales, purchasing, accounting, systematizing and running an office on economical basis; energetic, resourceful, with plenty initiative; experienced in oil, refining and various industries; excellent references. Box B-226, The Oil and Gas Journal, Tulsa, Okla.

SUPERINTENDENT of power and maintenance, or resident engineer; graduate engineer, with wide experience in steam, electric and gas power and in all kinds of plant maintenance, good reference; can guarantee results. Box B-229, The Oil and Gas Journal, Tulsa, Okla.

ENGINEER and superintendent—Civil engineer graduate, with seven years' construction and executive experience, desires position with large oil or construction company. Best of references. Box B-220, The Oil and Gas Journal, Tulsa, Okla.

SALES MANAGER or assistant, refinery or marketer, tank car sales, seven years' experience, wide acquaintance, now employed large corporation, married, best references. Box B-221, The Oil and Gas Journal, Tulsa, Okla.

EXECUTIVE AND ACCOUNTANT, 33 years, married, college education, now employed large oil company; speaks, reads, writes Spanish fluently, desires change to other oil or mining company operating Mexico or South America; 12 years' experience. Excellent references. Box B-194, The Oil and Gas Journal, Tulsa, Okla.

TAX MAN—Well qualified, strong personality, several years' experience in tax and claims, is now tax and claims commissioner of major oil company. Has good reasons for considering change. Has extensive acquaintance with taxing authorities in Mid-Continent Field, and several States. Can produce results. If interested would like interview. Correspondence confidential. Box B-191, The Oil and Gas Journal, Tulsa, Okla.

SALES REPRESENTATIVE—Experienced in operating southwestern branch dealing with oil producers, gasoline plants, pipe lines and power plants is looking for specialties to sell oil companies. Salary and commission or commission. Box B-200, The Oil and Gas Journal, Tulsa, Okla.

POSITION WANTED

EXPERIENCED lease man desires position with reliable company. A-1 reference. Box B-223, The Oil and Gas Journal, Tulsa, Okla.

HELP WANTED

LEADING EUROPEAN importers and distributors of petroleum products require first-class buying agents on commission in Pennsylvania, Texas, Oklahoma, Louisiana, California, etc. State full particulars, references. Write Box B-230, The Oil and Gas Journal, Tulsa, Okla.

WANTED — Superintendent to take charge of pipe shop in St. Louis, handling 30 to 35 men, seven pipe machines. Capable of turning out maximum amount of work at least possible cost. One who knows pipe casing and boiler tubes thoroughly. State qualifications, past experience and salary expected. Splendid opportunity for advancement. Box B-211, The Oil and Gas Journal, Tulsa, Okla.

MORE AVAILABLE
There are other good positions available in the oil industry.
Right now, executives are reading the "Position Wanted" Column hoping to find a man of your qualifications.
Mail your advertisement now for the next weeks issue so that they can get in touch with you.

PRODUCTION ACCOUNTANT—Man about 30 years old. Must be thoroughly familiar with oil producing from the executive accounting side. Should have ability to analyze financial and cost reports resulting in constructive criticisms regarding physical operations..
Would prefer someone whose experience includes actual field work.
The position is with a large producing and refining company and offers the right man a splendid opportunity to make a real job for himself. Applications should be typed if possible and should give complete information regarding education, experience (including the present employer) and an approximation of the salary desired. All information will be considered confidential and no reference will be approached without the consent of the applicant. Box B-228, The Oil and Gas Journal, Tulsa, Okla.

BUSINESS OPPORTUNITY

HAVE FIRST-CLASS rotary rig here and will contract well or lease rig; reference. Citizens State Bank. Address Biggs Brothers, Route No. 1, Luling, Tex.

DRILLING CONTRACTORS—Geologist desires to connect with reliable contractor. Object of drilling tests on large blocks where detailed surveys show good structure. Box B-227, The Oil and Gas Journal, Tulsa, Okla.

WILDCATTERS, ATTENTION
Will exchange large block oil and gas leases on first-class geological structure; natural gas seepage; easy stuff to work; in Polk County, Wisconsin, for test well. Geo. Laskowske, Turtle Lake, Wis.

FOR SALE — Complete carbon black plant, located near Thermopolis, Wyoming. This plant installed at a cost of two to three hundred thousand dollars. Must be sold at once. Write to Nate P. Wilson, 415 Con Roy Bldg., Casper, Wyo.

NET PROFIT OVER 190% ON YOUR BUSINESS 1925
It should do even better this year, we have more customers, friends, confidence and credit. We are increasing our warehouse, yard and trackage facilities. If you have some cash to invest in this well-established industrial business (a Texas corporation controlled by Texas people) where your dollars share equally with ours and should more than double each year, write quick; we will bring the proofs; say how much cash you have ready for investment. Address Box B-209, The Oil and Gas Journal, Tulsa, Okla.

BUSINESS OPPORTUNITY

HAVE TANK CAR marketing business now selling approximately 150 cars per month. Need man and money to increase business which can easily be done with added finances. Would consider an arrangement with large reputable marketer or individual. Box B-222, The Oil and Gas Journal, Tulsa, Okla.

IN THE FOOTHILLS of the Ozark Mountains, I have found a fortune. Millions in mineral exposed to the naked eye. Have 1,400 acres of this land and will sell half interest for $8,500 quick action. For sample and full explanation write P. O. Box 385, Tahlequah, Okla.

CAPITAL SEEKERS—Your copy of "Getting the Money Under the Idea" sent free. The Dickinson Co., 29 So. La Salle St., Chicago, Ill.

BUY ROYALTIES on drilling structures. Quick play for profit on small investment. Get on our mailing list. Hyland & Co., Kennedy Bldg., Tulsa, Okla.

ELECTRIC ARC WELDING
Oil pipe line welding by contract.
Williams & Davis Boiler & Welding Co.
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Dallas, Tex.

LETTERHEADS—PRINTING

CONSUMERS' LEDGERS
We are prepared to furnish from stock standard forms of gas meter Consumers' Ledgers. Sample forms and quotations on request. First class material and workmanship.
DERRICK PUBLISHING CO.
Oil City, Pa.

OIL FIELD LEGAL BLANKS—Leases, assignments, releases, township books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

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Before disclosing your invention to anyone send for blank form.
Evidence of Conception
Bulletin "How to Establish Your Rights" and complete information free.
LANCASTER AND ALLWINE
240 Ouray Bldg., Washington, D. C.

PATENT-SENSE — Valuable book (free) for inventors seeking largest deserved profits. References include prominent oil men. Write Lacey & Lacey, 718 F. St., Washington, D. C. Established 1869.

ORCHARDS AND FARM LANDS

READ THIS—For sale, 640 acres rich, dark, chocolate soil, in Haskell County, 8 miles from railroad town, 500 acres in cultivation, three wells good water, large surface tank; 8-room 2-story dwelling, large 2-story barn and outbuildings, near good school. Price $60 per acre; $7,000 cash, purchaser to assume loan of $7,000, balance to suit. Might take some good trade. Write for full particulars.
P. D. SANDERS
Haskell, Texas

FOR SALE—MAPS

ARKANSAS WELL LOG COMPANY
214 P. O. Bldg., El Dorado, Ark.

ADDRESSES WANTED

JOHN WASHINGTON, formerly from Ardmore, Okla., please communicate with Buckley, Webster Bldg., Chicago, Ill.

ANYONE KNOWING the whereabouts of Thomas Dewey Whitaker, a riviter and member of Boilermakers Union, will confer a favor by notifying his mother, Mrs. Marie Whitaker, general delivery, Lincoln, Nebr. He was well known in Ranger Field. Please write to me if you have seen or heard of him since 1921. He is now 27, wears glasses, has blue eyes and a fair complexion. I will also appreciate any information concerning his brother.

Additional Classified Want Advertisements on Page 126

Traffic Cops and Oil Jobbers Have a Great Many Worries in Common

Smash-ups—accidents—tie-ups in traffic—these are some of the things which bother a traffic cop. They are things he must guard against and prevent as he controls the rush of cars, wagons and other vehicles at a busy corner.

And when evening comes and the traffic cop can go home, we believe that he has earned a good night's rest. He is entitled to take off his shoes—prop his feet up—bury himself in the paper and try to make the best of a five-cent pure Havana.

However, there are others—oil jobbers—the traffic cops of the oil business. It is their job to make sure that the oils are relayed from the refineries to the retailers without a hitch—without lost time—without undue expense.

Refineries turning out thousands of barrels of oil every day must be sure that there is a big market for it. They must be saved the endless detail of taking care of orders from all parts of the country coming from retailers who need only a smaller quantity (barrel or so) of oil at a time. It is the oil jobber who saves them this worry. And it is to the oil jobbers that the refineries turn to sell their oils at a fair profit.

Dealers needing various kinds and grades of oils from day to day must be saved the bother and resulting delay in shipment from writing out and sending as many orders as they need different kinds of oils. Such a condition, did it exist, would bring havoc to their business and tie up their service. It is the oil jobber who saves them this worry. And it is to the oil jobbers that the retailers turn as a source of supply—a warehouse for them.

Such is the service the Acme Petroleum Company gives the oil industry. It pays. Try it today.

(This is the fiftieth of a series of informatory advertisements on distribution problems with which the oil industry has to contend.)

ACME

Petroleum Company

Executive Offices: 624 S. Michigan Ave., Chicago

KANSAS CITY, MO. Land Bank Bldg.

DALLAS, TEXAS Magnolia Bldg.

OIL STORAGE PLANTS

Over 7,000,000 Gallons Storage

West Tulsa, Okla. Riverdale, Ill.

(*Chicago Switching District*)

CHICAGO MARKET MORE OPTIMISTIC ON FINE WEATHER AND SMALL STOCKS

By J. B. Waldo

CHICAGO, Mar. 20.—The fine, sunshiny weather which came to this city beginning with Saint Patrick's day, has put new life into the trade, and given the local oil industry a new viewpoint. The gallonage reports for February were favorable compared with last year but March, 1925, was a very good month and the first half of this month has been very bad so that distributors have had a poorer business than a year ago and nothing but continued good weather for the remainder of the month will enable the trade to equal last year's record for gasoline sold. The feeling is rather optimistic regarding the remainder of the month while all are sanguine of a good business for the season. Talking with a couple of jobbers from Wisconsin one of them said the outlook was not good for the immediate present as they had snow up to the hubs. "What of that?" said the other, "we have snow in our city 2 to 3 feet deep and the roads are all ice but a couple of days of this weather will change all that and we shall have good business."

Regarding stocks in jobbers' hands, the general opinion is that they are too small to moderate. There has been very little buying so far this month and while the gasoline business has been small still there has been distribution to some extent and stocks have been reduced. Even those who stocked up just before the beginning of the year believing January would find a higher price situation, have worked off a good part of their supplies and it will take only a little demand to bring the jobbers into the market for considerable quantities. The sales agent of one large refiner stated that if this weather continued for a couple of days more, he thought it would be good business to order some extra cars forward, for he felt sure a good week end would bring a large demand for nearby cars that could be delivered promptly.

The first spring-like days cause a desire to get out on the road and drive, just drive, with the average motorist. They have been unable to do more than use their cars for going to and from business or for errands of various kinds. There was no desire to drive for the sake of driving but with the first spring-like days it would seem that every car owner wanted to get away from the city streets and see if spring was really making any showing in the country. There is a very hopeful feeling and it will take but a little more favorable weather to change this feeling to action which will mean buying orders.

Guessing on Stocks

Regarding stocks of gasoline in the refining districts, it is stated in the reports that cover the country that there are considerable accumulations but refiners who have been in this city for the week state that there are no large stocks held in the Mid-Continent Field that are for sale to individual distributors. The case of the Standard Oil Co. of Indiana is said to be typical. This company had, according to its annual reports, a very much larger stock of refined products on hand at the date of that report than a year ago but this stock was for its own distribution or for export business. The management stated it expected to be able to sell the increased quantity through its own stations. There are many other refineries which may have stocks on hand which are included in these trade reports but which are held for their own distribution or for their contract or franchise customers. On the other hand the number of smaller plants with no established or controlled outlet that are operating is limited, according to these refiners who have been in the city, and they have sold about as fast as they ran the gasoline so that there is no large quantity of gasoline in any sense that will seek a market through the medium of direct sales to marketers or distributors. This is the report made here by some well-known men from the Mid-Continent Field, and by the local sales representatives of other refiners. A stock that might seem large and even burdensome when the demand was severely restricted by bad conditions may vanish like a snowdrift in the sunshine on a warm day when the consumption reaches normal proportions. Many believe this is just what will happen.

The representative of a large refining organization said that talking with the Tulsa representative of a marketing organization the latter stated Navy gasoline was being freely offered at 9⅝ cents. The refiner said if this was true he would buy 200 cars at that price. Later in the day the seller came back with an offer to sell him the cars but the price was 9⅞ cents. The refiner told him, according to his own story, that he was not buying gasoline but if there was much distress oil in the market he would take 200 cars at the price mentioned and that ended the matter as there were only a few cars available at 9⅝ cents at any time and none as soon as a real buyer was found. Several times during the week Tulsa brokers have wired the trade they could buy Navy gasoline at 9½ cents but so far as the writer knows no purchases have been made at that figure. In several instances orders have been wired in only to bring a reply that the 9½-cent gasoline had all been sold but that they could buy at a slightly higer price and "please make a firm offer."

Resistance to Higher Prices

There may be some resistance to the establishing of higher prices as the jobbing trade generally has been offered gasoline, which they did not want at any price, at 9¾ cents and they fail to recognize that these offers were exceptional and did not represent unlimited quantities. If there had been any real buying, the sum total of all the gasoline available to the jobbers at the low prices quoted them direct by a few concerns in the field would not have supplied the needs of the jobbers of part of one state. As it is, the offering of gasoline at these low prices created a feeling that the market was weak and declining which was not the case and could hardly be a fact for the market as a whole at this time of the year. Generally refiners have not been offering their product freely at any price. Those posted knew it would not increase their sales to do so and would tend to create a wrong impression regarding the market. There have been some quotations of 9⅝ cents for immediate shipment for limited quan-

CLASSIFIED WANTS

(Continued from Page 125)

WANTED

WANT producing royalties and settled production Oklahoma. Give full particulars first letter. Also consider drilling blocks good geology. No brokers. Write P. O. Box 1382, Oklahoma City, Okla.

WANT several desirable blocks leases for test wells, must have time to check or core drill for structure, prefer Creek, Okmulgee, Okfuskee or Tulsa Counties. Box B-203, The Oil and Gas Journal. Tulsa, Okla.

WANTED—Producing royalties Oklahoma and Kansas. Give full details. P. O. Box 502, Independence, Kans.

FOR SALE—MAPS

AMARILLO DISTRICT
Correct, up-to-date maps.
AMTEX MAP CO.
Amarillo, Texas
533 Kennedy Bldg., Tulsa, Okla.
Phone 8743

tities but the ruling price during the week has been 9¾ cents for resale and 10 cents to the trade on U. S. Motors gasoline.

In the absence of demand for the Motors grade there has been a limited call for the higher gravities with prices steady on the 60-62 400 and a little easier on the 64-66 and better grades. The approach of April when the 56-58 450 gravity will be deliverable on contracts has not made any demand apparent for that grade which is only occasionally called for in this market. There has been little talk of any export business except an occasional statement that quantities could be sold at lower prices than were available. The export movement, like the contract and franchise business, goes along steadily judging from exports as reported from Washington but it is not felt greatly here, what export buying is done being very quietly performed. The natural product has not been active here and prices quoted are a shade lower than a week ago for the better grades with the lower priced in better request than the grades above C.

Kerosene Firm and Active

Kerosene continues firm and in active if not as large demand as recently. The 41-43 product can be bought at a slight decline from the peak of the market but the change is not more than one-eighth of a cent from the real top. There is little or no demand for the 42-44 gravity which is quoted very largely nominally at 7 cents. The number of tractors has been considerably increased during the past couple of years and they are becoming a more common sight than formerly. Some parts of the Northwest are stated to have a tractor for every other farm. Stocks of kerosene are stated to be more liberal and the offerings are larger, several refiners being in position to ship immediately who have been behind on deliveries.

Furnace Oil Boom

Furnace oils have had a genuine boom during the past 10 days. The cold weather during the first part of March increased the consumption very greatly and no one seemed to have any quantity of furnace oil available for delivery. Even during the past few days local tank wagon distributors report they have had a very large business, some saying their sales were the largest for the winter. The limited supply seems to have resulted from the fact that refiners were through for the season and were not running any distillates for furnace oils. There were many cases where the distributors tried to insist they had cars coming to them. In some cases the distributors tried to secure deliveries of cars they had contracted to buy during January and February but for which they did not give shipping instructions at the time. Refiners refused to recognize these claims for the most part and insisted that February delivery meant delivery during that month and if not taken at the time, there were no future cars coming to the buyer. Of course there will be considerable spells of weather when the ice will form on pools during the night and fires will be needed night and mornings if not all day but the general impression is that the large demand is over for the season. In some cases refiners delivered what they had and grades that had been rejected as off color or not up to specifications earlier in the season found a ready sale. Some buyers paid as high as 4½ cents for a good 38-40 straw distillate and the 36-38 gravity which went begging two weeks back sold for 4½ cents in a few cases. Bottom prices right now are 4¼ cents for the 38-40 straw and 4 cents for the 36-38 light colored distillate.

Gas Oils Strong

The unsatisfied demand for distillate flowed over and down to gas oils which were already scarce and hard to buy, resulting in a strong market at higher prices. Refiners with known stocks of gas oil have refused to quote saying they were reserving the oil for their own use, in most cases for their cracking stills or for contracts to be filled. Refiners have been buyers of considerable amounts and there has been a strong and somewhat excited market. One large refiner offered 4⅛ cents for gas oil and wanted a considerable quantity at that price. How much he bought is not known. Sales were made at 4¼ cents and slight premiums were paid over this price where immediate delivery could be given. The outlook is for a firm market for this product for some time more particularly for the straight run product suitable for cracking. Some of the large refiners would buy almost any amount at 3½ cents or a little more but will have to revise their prices upward if they want to buy now or for early delivery. It is reported that the Bartles-Maguire plant, recently purchased at East Chicago, will be run as a cracking plant on gas oil.

Fuel Oils Active

Fuel oils have been active and strong. The greatest strength is in the higher gravities which are being taken by those who usually buy gas oil but will not pay the price. These higher grades are now bringing over 3 cents a gallon and are very scarce, almost unobtainable. The spot demand for the regular grades is also some larger, partly due to the expiring of contracts and the refusal of the buyers to contract at present prices quoted them by refiners. There is also some better industrial demand, but this will be offset by the less quantities of fuel oils used for heating in a short time. The great strength to the situation is to be found in the limited supply rather than the greatly increased demand. In fact the demand seems to be running along with little change as to volume but with considerably more spot market buying and less contract business. One of the largest individual users, the Cudahy Packing Co., whose low price contract expired recently, has bought 200 cars of low gravity oil and has just sent out another inquiry for a large quantity. The 200 cars is about one month's supply. One of the leading marketers of fuel oils stated that the longest contract it had made recently was for 60 days, and this is typical of the situation. Users of fuel oil will be very slow to contract at the present market prices and sellers are unable to secure any basis on which to make

(Continued on Page 143)

EASTERN GASOLINE MARKET FIRM BUT COMPETITION IS MORE BITTER

By N. O. Fanning
New York Bureau, The Oil and Gas Journal, 30 Church St., New York

NEW YORK, Mar. 20. — The eastern refined oil markets were quiet during the past week. Unfavorably cold weather did not help consumption any. The northeastern states as a whole were covered with snow and many of the roads were impassable for motor traffic.

The undertone of the gasoline market appears to be firm, although competition seems a little more bitter. During recent years the Mid-Continent has furnished the chief competition in this market, but the situation so far this year is far different from that of any preceding year, according to students of the situation. Competition is not coming from the Mid-Continent like it used to, but from other sources. These sources include largely California, Mexico and South America. This, it is said, accounts for the comparative inactivity of the Mid-Continent market at the present time.

It is said that the large refiners on the Atlantic Coast are buying crude so largely in California, Mexico and South America as to give these markets the benefit of the increased demand, while marketers are buying excess requirements for gasoline and other refined products from the same sources. The Mid-Continent market is not expected here to show much improvement until this buying is completed.

An example of competition from South America in the eastern gasoline markets is the arrival a few days ago of a cargo from Trinidad aggregating 1,125,756 gallons consigned to an independent distributor. In addition several cargoes of gasoline have recently come in from California. It may be said that the eastern market is saturated just at the moment. It is pointed out that water shipments of gasoline are a big influence on the market as a rule because of their size, cargoes containing 3,000,000 to 4,000,000 gallons each being quite common. It happens that several arrived at eastern ports during the past week. New York, Boston and Philadelphia were the recipients.

It appears that this year competition from smaller companies that have recently acquired terminal facilities at seaboard will be especially keen, but this may be offset by smaller tank car arrivals, as it is said inland refiners are in a strong position and are not "dumping."

Kerosene Unchanged

The eastern kerosene market is unchanged, with consumption holding up well. A seasonal turn downward in the market is expected in the near future.

Fuel Oil Firm

The eastern fuel oil market is displaying a firm tone despite heavy receipts from Mexico and California during the past week. Apparently the product is in strong hands, and there is no disposition to cut prices. Bunker oil is showing some improvement, while the demand for Diesel oil is strong.

Gas oil continues firm at 6 cents a gallon.

Lubricants

The market for lubricating oils is steady. Demand for cylinder stocks has improved somewhat, but inquiries and orders from industrial sources for reds and pales are distinctly below normal for this time of year. Depression in the textile industry has contributed to this somewhat, and it is said manufacturers generally are not in the market as heavily as a year ago.

Petrolatum Weak

The petrolatum market is somewhat weak. Amber and light amber are being offered at slight concessions, the former bringing 3⅜ cents a pound and light amber 3⅝, off ⅛ cent from a week ago.

Cream and lily white petrolatum continue unchanged at 6 and 8 cents a pound, respectively. Snow white is apparently in supply, however, as business is reported to have been done at as low as 9½ cents a pound, a drop of ½ cent within a comparatively short time.

Exports Increase

Bulk shipments from New York have held up fairly well, and it is expected they will increase with the advance of spring. During the past seven days 3,126,324 gallons of gasoline and 3,042,587 gallons of kerosene were exported to Europe in bulk. Case shipments of gasoline amounted to 1,532,700 gallons and of kerosene 1,607,950 gallons.

Aside from gasoline and kerosene, wax and asphalt shipments held the center of interest. Shipments of paraffin wax were close to a record for a single week, aggregating 4,683,705 pounds, of which refined wax made up 3,905,880 pounds.

Two large consignments were responsible for bringing up the shipments of refined wax to a high figure. One, consigned to Japan, aggregated 2,012,340 pounds. The other went to China and aggregated 1,108,580 pounds.

Exports of petroleum asphalt for the week aggregated 2,016,000 pounds, a large figure, especially following the preceding week's shipments of 3,387,600 pounds. The bulk of the shipments during the past week were to England.

The following table shows principal exports of petroleum and petroleum products from New York during the last three weeks (figures in gallons unless otherwise noted in parentheses):

	Week Ended		
Gasoline:	Mar. 17	Mar. 10	Mar. 3
Bulk	3,126,324	3,797,736	2,051,631
Cases	1,532,700	3,287,500	1,477,580
Kerosene:			
Bulk	3,042,587	.....	2,468,739
Cases	1,607,950	4,311,950	1,223,530
Turpentine substitute:			
Bulk	65,407	.....	.....
Fuel oil:			
Bulk	.....	.....	1,258,500
Lubricating oil:			
Bulk	.....	2,057,840	1,728,806
Barrels	704,600	940,100	827,100
Cases	262,560	398,790	245,560
Paraffin wax:			
Bags (lbs.)	3,905,880	1,546,600	2,326,720
Barrels (lbs.)	677,825	352,175	1,194,150
Petroleum asphalt:			
Barrels (lbs.)	2,016,000	3,387,600	1,142,550
Crude oil:			
Barrels	.....	293,600	420,900

The foregoing shipments include barrel shipments of 500 bbls. or more and case shipments of 1,000 cases or more.

Tanker Charters

The tanker charter market continued fairly active, with rates tending downward. New fixtures include the following:

Tanker Torres (Am.), crude oil, Gulf to Baltimore, 33 cents, April loading.

Tanker Cape Henlopen (Am.), California to north of Hatteras, 80 cents, April loading.

Tankers Agwisea and Agwisun (Am.), California to north of Hatteras, 79 cents a barrel, late April or early May loading.

Tanker Wellfield (Br.), 3,296 tons net, Gulf to United Kingdom, Continent, 22s. 6d., prompt loading.

Tanker Phoenix (Am.), Gulf to South France, 28s., clean, April loading.

Tanker Shreveport (Am.), 70,000 bbls. crude, Port Arthur to Boston, 32 cents, April loading.

Tanker British Star (Br.), 4,080 tons net, California to Japan, fuel oil, 80 cents a barrel, April loading.

Tanker Sunbeam (Am.), clean oil, California to north of Hatteras, 82 cents, April loading.

Tanker Vacuum (Am.), California to north of Hatteras, 80 cents, April loading.

Motorship Hamlet (Nor.), 6,500 tons, gas oil, Black Sea to Continent, April-May loading.

Oil Receipts Increase

Estimated receipts of crude and refined oil by water at Atlantic Coast ports during the week ended March 17 were 4,681,000 bbls., a daily average of 669,000 bbls., compared with 3,302,000 bbls., or 472,000 bbls. daily, the week ended March 10.

Receipts at New York were especially large, aggregating 2,106,000 bbls., a daily average of 301,000. Receipts at Philadelphia aggregated 619,000 bbls., or 88,000 bbls. a day, while Baltimore's total was especially large for that port, amounting to 590,000 bbls., a daily average of 84,000 bbls.

Receipts from the Gulf Coast during the week ended March 17 were estimated at 2,434,000 bbls., a daily average of 348,000 bbls. Receipts from California totaled 865,000 bbls., or 124,000 bbls. daily. Of the California receipts, 533,000 bbls. arrived at New York.

Imports for the week ended March 17 were the highest in months, aggregating 1,382,000 bbls., a daily average of 197,000 bbls. Of the total, New York received 633,000 bbls. and Baltimore came second with 269,000 bbls. Imports to southern ports, especially Jacksonville, were also heavy.

Of the imports, 1,158,000 bbls., or 165,000 bbls. daily, were from Mexico, and 224,000 bbls., a daily average of 32,000 bbls., came from South America.

The following table shows estimated daily average receipts of crude and refined oil by water at Atlantic Coast ports from the Gulf and Pacific Coasts of the United States, and imports, for the last three weeks; also monthly record for the last 12 months (figures in bbls.):

	Week Ended		
	Mar. 17	Mar. 10	Mar. 3
Gulf Coast	348,000	251,000	270,000
Pacific Coast	124,000	61,000	44,000
Imports	197,000	159,000	178,000
Total	669,000	471,000	492,000

Daily Averages by Months

1926:	Gulf	Pacific	Imports	Total
February	332,000	73,000	122,000	527,000
January	279,000	59,000	96,000	434,000
1925:				
December	298,000	56,000	103,000	457,000
November	259,000	36,000	92,000	387,000
October	249,000	36,000	102,000	387,000
September	306,000	66,000	76,000	448,000
August	291,000	54,000	90,000	435,000
July	391,000	63,000	107,000	561,000
June	379,000	66,000	118,000	563,000
May	312,000	81,000	145,000	538,000
April	333,000	78,000	101,000	532,000
March	273,000	82,000	135,000	490,000

The foregoing estimates are based upon the carrying capacity of incoming oil-laden tankers.

One Evaporator With Three Tube Stills

Five Shell Stills Operated Continuously at California Refinery With Back Trap From Series of Bubble Towers. Efficient Heat Exchangers

By George W. H. Reid

Among the features of interest incorporated in the construction and operation of the Jameson Oil Co's. refinery at Vernon, Calif., is the practice of operating three tubular retorts simultaneously and discharging the heated oil for vaporization into a single or common evaporator. Another item of interest is the practice of running five shell stills continuously by charging them with the back trap or condensate accumulated in the series of bubble towers which fractionate the tubular retort vapors.

The company secures its crude oil from its own production in the Santa Fe Springs and Huntington Beach fields. The plant has a rated capacity of 6,000 bbls. daily and this capacity is based upon the size of the tubular stills alone, as the shell stills are confined to rerunning.

The method of procedure here is a bit different from the usual practice. The tube stills are employed for the total evaporation of all overhead distillates, yet the fractionation equipment, bubble towers, is only called upon to separate the gasoline vapors at this stage. Two of the tube stills are of company design and construction. One consists of 2-inch tubes 20 feet in length with a capacity of approximately 1,000 bbls. daily. The other still handles 4,000 bbls. daily through 4-inch tubes. Both of these stills are fired from the side through cylindrical Frazier type Dutch ovens. The third tube still is of Foster type, having a capacity of 1,000 bbls. and constructed of 2-inch tubes. All three tube stills are manifolded and connected in such a manner that all of them discharge their heated crude into the same evaporator.

Usually it is found that each tube still has a separate evaporator, but in this instance the evaporator was designed to handle vapors and oil from all three stills. Any still may be taken off the line for repairs etc., without seriously interfering with plant operation.

Before the crude enters the retort it passes through several Braun type, heat interchangers. Sufficient equipment is provided to raise the temperature of the crude upon leaving the exchangers to about 300 degrees Fahrenheit. From the interchangers the crude enters an evaporator, with which a dephlegmator (actually a bubble tower) works in conjunction, and at this point the crude is stripped of 12 to 15 per cent of its vapors. This practice of taking advantage of the heat interchange for actual distillation work is always worthy of note. The writer has known of many experiments among refiners attempting to remove gasoline streams from the exchangers, many of which failed due to the operator's determination to handle his crude through only one pump. The additional expense of the second crude pump is always quickly offset by increased efficiency, lowered fuel consumption and increased capacity of plant. The heat exchangers on almost any refinery distilling light crude should be made to perform 10 to 15 per cent of the distillation work at very little additional expense.

Leaving the first separator the crude is charged to the tube stills. The temperature employed in the tube stills is sufficient to assure the vaporization of all the desirable overhead fractions, or to produce a fuel oil residuum of about 250 degrees Fahrenheit flash. Approximately 500 to 550 degrees Fahrenheit is the temperature required.

Figure 1 illustrates the distillation equipment. Leaving the tube stills the hot oil and vapors enter near the top of the evaporator. This equipment is also company design, being about 4 feet by 30 feet in dimensions. The hot oil, in its descent is baffled repeatedly, and at the bottom of the evaporator it meets rising superheated steam at a temperature of 600 to 700 degrees Fahrenheit. Due to the action of the superheated steam the equipment can be called an evaporator in the truest sense of the word.

The steam superheating device is unique. The steam from the power house is superheated by constructing a coil, through which the steam passes, of 2-inch pipe, 9 joints, or 180 feet, and placing this coil in the hot gas zone of the tubular retort. By a series of by-pass valves the heated steam may be

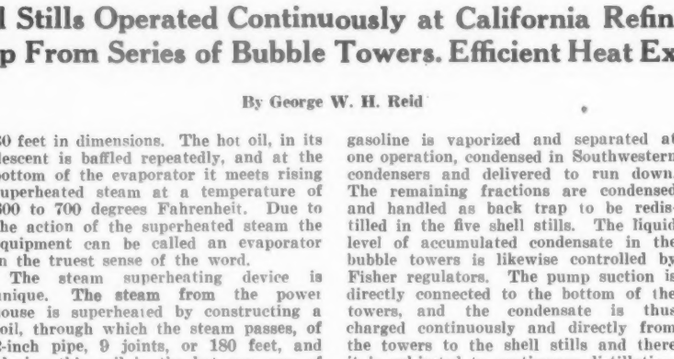

Figure 1. View of distillation equipment, Jameson Oil Co. refinery at Vernon, California

either conducted to the bottom of the evaporator or into the lines leading elsewhere for power purposes. Usually the amount of steam necessary for the evaporator is controlled and only that volume is subjected to superheating. A Fisher regulator controls the liquid level of residuum in the bottom of the evaporator, the residuum being continuously removed and discharged through the Braun exchangers as previously mentioned.

Bubble Towers

All of the vapors are conducted through the second and third bubble towers through separate vapor lines. The towers are of the usual bubble type, designed and constructed by the company to meet its own peculiar problems and conditions. These dephlegmators separate the gasoline from the total volume of vapors, condensing all cuts below gasoline as back trap. Thus all of the gasoline is vaporized and separated at one operation, condensed in Southwestern condensers and delivered to run down. The remaining fractions are condensed and handled as back trap to be redistilled in the five shell stills. The liquid level of accumulated condensate in the bubble towers is likewise controlled by Fisher regulators. The pump suction is directly connected to the bottom of the towers, and the condensate is thus charged continuously and directly from the towers to the shell stills and there it is subjected to continuous distillation. Three of these stills are 300-bbl. and two of them are 500-bbl. in size.

The temperature of this back trap material as it leaves the dephlegmators is about 350 degrees Fahrenheit, the condensate having an initial boiling point of approximately. 365 degrees Fahrenheit In the usual method of operation this distillate would be classified as tops.

Shell Stills

Figure 1 and 2 illustrate the types of fractionation equipment provided at this plant. The shell still to the left in Figure 1 is equipped with Van Tilburg dephlegmators. The condensate or back trap from the bubble towers is charged to this still, while hot, and the Van Tilburg equipment is employed to fractionate a heavy naphtha or engine distillate, usually about 280 degrees initial boiling point and about 450 degrees end point. The dephlegmators are each sprayed continuously with a small stream of water.

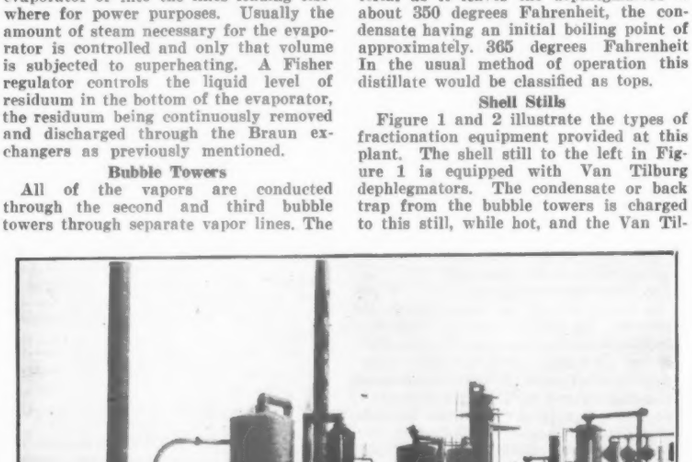

Figure 2. Evaporation and fractionation equipment. Bubble towers and condensers Van Tilburg dephlegmators on last shell still.

The remaining four stills are employed in the distillation of kerosene and heavier distillates. The company distills all products overhead, using the battery of shell stills operating continuously on back trap condensate, producing close cut grades of distillates of various types for different markets. The battery of shell stills is also connected in such a manner that any one of them may be taken out of continuous service for batch purposes in the preparation of special distillates, or for repairs, without seriously hampering the performance of the system.

The company owns two water wells which yield water at the rate of about 420 bbls. per hour and this water is employed for power and cooling purposes throughout the plant. To overcome the problem of scale formation, all the water is softened in a Graver water softener. The softened water tests about 1 grain of hardness and is used in the boilers and condensers, of which the plant has the Southwestern and Braun types, as well as the box or coil type. The water is circulated through the plant by electrically driven centrifugal pumps being provided as auxiliary equipment.

In addition, the company generates its own electricity for lighting and power purposes. The generator is driven by a 100 horsepower Fairbanks-Morse type Y straight Diesel engine, which is said to be one of the first installations of its kind on the west coast.

In this plant much consideration has been given to the securing of flexibility of operation and in its construction the advantage of the ability to remove one or more distillation units without seriously interfering with continuous operation has not been overlooked. M. P. Simons is manager of the Jameson Co., T. B. Halloran is plant superintendent.

COMPULSORY LICENSES FOR UNUSED PATENTS

By Charles E. Kern
Washington Bureau
The Oil and Gas Journal

WASHINGTON, D. C., Mar. 20.—A radical change in the patent law is contemplated in a bill known as S 3474, providing for compulsory licenses for unused patents introduced by Senator King of Utah who said he had many complaints of the suppression of patents that should be utilized for the welfare of the people at large. Many patents, he said, are suppressed to prevent the public from learning of them. This bill provides that if for five years a patent has not been made use of the Commissioner of Patents, under a prescribed proceeding, may grant licenses by which anyone may make use of such inventions. As the number of patents granted in the oil industry is probably as large as in any other branch of industry, this law will be of particular interest to producers, refiners and distributors of oil.

OIL COMPANY LOSES

WASHINGTON, D. C. Mar. 20.—The Supreme Court of the United States has affirmed the judgment of the Court of Claims in the case of the Interocean Oil Co., dismissing the petition of the company on the ground that it did not state a cause of action. The Interocean Oil Co. sued the Government for compensation for the removal of certain oil tanks from Cartaret, N. J., to Baltimore, Md., during the war. The company claimed the removal of its tanks was ordered by the War Department under an agreement that the Government would reimburse the company for expenses and all losses.

PHILLIPS PETROLEUM CO. THE LARGEST PURCHASER

(Continued from Page 24)

Peters & Oliphant had no opposition when they bid the minimum of $300 for Tract 564, the southeast quarter of Section 2-26-5, and the lease was awarded to them at that figure. At a glance it would seem as though this lease was worth much more than $300, but it offsets three old properties, none of which has been a very large producer and has been pretty well drained. North of it is the Comar Oil Co.'s $410,000 lease in the northeast of Section 2, which produced 262,927 bbls. from November 1922 to February 1926. Northeast is the Laurel Oil & Gas Co.'s $3,000 lease, producing since May, 1921, with a total yield of 860,102 bbls., while east is Simons, Moore and others' $3,100 lease which has yielded 414,479 bbls. in exactly four years.

Tract 584, southwest quarter of Section 35-27-5 went to the Mid-Kansas Oil & Gas Co. for $12,000. North of it is the Skelly Oil Co's. $205,000 lease, which from July 1924 to February 1926 produced 59,808 bbls. Northeast lies the Phillips Petroleum Co's. $495,000 lease, which produced 461,784 bbls. from October 1922 to February 1926, and east is the Mid-Kansas Oil & Gas Co's. $665,000 lease with a production of 704,154 bbls. from October 1922 to February 1926. This last named lease is an old Waite Phillips Co. property, which the Mid-Kansas acquired by purchase along with other Burbank leases of the same company. The Mid-Kansas company picked up a popular priced lease in Tract 584, northwest quarter of Section 27 27-5, which it got for $1,000. This tract might have been expected to command a little interest. North of it is the Gypsy Oil Co's. $670,000 lease with a production of 668,431 bbls. from June 1923 to February 1926; northeast is the Skelly Oil Co's. $740,000 lease, which between June 1923 and February of this year produced 829,635 bbls. and east is the Mid-Kansas Oil & Gas Co's. $670,000 lease which shows a total output of 280,480 bbls. from June 1924 to February 1926.

The above were all the close-in leases offered in the Burbank Field. Other quarter sections somewhat removed from the field, but in the same township in which it lies brought small prices as strictly wildcat tracts.

Buying in the Fairfax Area

The leases in Township 25-6, in which lies the new Fairfax Pool, which has thus far been a disappointment, brought some good prices ranging as high as $16,000. There was considerable competition for the few tracts that were offered, between the Prairie Oil & Gas Co., Barnsdall Oil Co., Indian Territory Illuminating Oil Co., Gypsy Oil Co. and Sinclair Oil & Gas Co. Tracts 494 and 495 constituting the east half of Section 2-25-6 were bought by the Prairie Oil & Gas Co. for $15,000 and $16,000 respectively. They lie about 3½ miles north and couple of miles east of the Prairie's lease in Section 21, which is producing. John H. Markham Jr., owns the west half of Section 1, just east of the Prairie's purchase but has never done any development work on it. Mr. Markham paid $4,100 for the northwest and $2,300 for the southwest quarter at the sale of December 12, 1921. Tract 499, the northwest quarter of Section 31-25-6 was sold to the Gypsy Oil Co. for $16,000 and the same company acquired the tract south of it for $8,100.

ROCKY MOUNTAINS

(Continued from Page 48)

of the plane became clogged and caused a forced landing near Moab Canyon, about 5 miles from the town of Moab. The plane was damaged considerably by the rough ground and rocks and the pilot and Mr. Hansen were shaken up and bruised but suffered no serious injuries.

A party of 50 or more business men from Salt Lake City are making preparations to visit the discovery well this week and the party will travel by the gasoline boat on a special excursion.

Due to a decision of the Salt Lake City Land Office, many tracts now held by the larger companies in the Moab district are expected to be relinquished. This decision states that where the original permitee has sold or contracted his permit or lease to a second party or company and reserves only a small part of same or none at all, the second party will be considered by the Land Office as being direct holders of the permit or lease, and as such are obligated to the terms of same as stipulated in the Leasing Act. Some oil operators and companies in the Moab district have secured permits or leases from several individuals which cover many thousands of acres and as one company or individual can hold only 2,560 acres of land under a Government permit, all areas being held by one company or one individual over that number of acres must be relinquished under the Land Office decision.

The Texas Co. has purchased a gasoline launch for the company's use at Moab and Cane Creek. The geological crew of this company is making locations for wells on a permit The Texas Co. has on the river bed at Cane Creek and the plans are to support the drilling machinery on piling.

The Allies Oil & Gas Co. is to start a wildcat on Section 17-21-26, about 4 miles southeast of Moab and the Embar Oil Co. is preparing to drill the Big Six Oil Co.'s well at Moab deeper. The Utah Oil Development Co. is also starting a well on the edge of the town.

Fort Collins Field

In the Fort Collins Field in Colorado, the Union Oil Co. of California has reached a depth of 4,825 feet in the Evans well, on Section 24-8-29. This well is now 330 feet below where the Muddy sand should have come in, according to the Ver Stratten well, less than 1 mile to the east and the Evans well record indicates that the Fort Collins structure has a very steep dip to the west of the axis. In the Ver Stratten well, on Section 19-8-68, the sand was found at 4,500 feet and it is considered that this well is on the axis of the structure. The Evans well has found no oil or gas.

On Section 30-8-68, the Union of California is running a string of pipe in the Whittaker-Blunck well and this well will make a nominal producer when put on the pump. The hole is nearly full of oil, but the well has not flowed. This well also found the pay at 4,500 feet and it is located on the east side of the axis, though close to the center of the field.

Royalties from Government owned lands in Colorado paid during 1925 amounted to $71,285. This is slightly under Montana.

The British Associated Oil Co. drilling in the Warm Springs Field, in Hot Springs County, Wyoming, out of Thermopolis, had the new producer tested by Albert Bartlett, Wyoming State geologist, the past week. The well was found to be capable of making 197 bbls. per day of black oil. This oil comes from the Embar sand at 950 feet.

Test Eastern Montana

W. H. McDonald and a syndicate of Minneapolis business men have started to lease blocks on the Baker-Glendive anticline near the eastern boundary of Montana. The syndicate is to make a test this spring, but in making this test, a new idea in drilling rigs will be used to put down the well. This rig is different from any ordinary type of standard or rotary rig and is the invention of McDonald. The Baker-Glendive anticline in Montana is a large structure, but so far it has only produced some gas from shallow depths and the deep wells drilled there have found nothing.

The past week has seen the pro-rating schedule lifted in the Sunburst Field and as a result the production there has jumped to 17,500 bbls. from around 9,000 bbls. as heretofore. At the same time, the warm weather indicating an early spring has started the operators to making locations and commencing wells and 14 new wells were commenced last week. The field is short of water for drilling and camps, but this is expected to be remedied by drilling more shallow wells for water and by laying some pipe lines to reservoirs. Operators at Shelby are predicting that the field will ship 500,000 bbls. per month this summer. In January, the field shipped a total of 278,290 bbls. and February saw 377,000 bbls. sent from the wells. Now that the Ohio Oil Co. and the Illinois Pipe Line Co. have completed the tank farm and the Homestake Exploration Co. has one 80,000-bbl. tank ready for crude with a second one on the ground, the operators have little fear of further shutdowns.

Completes Good Well

The Homestake Exploration Co. completed a flowing well that started off at 835 bbls. naturally, on Section 36-35-2, and looks good for 1,000 bbls., as the flow is increasing. On the same section, that same company drilled another well to the Ellis sand at 1,447 feet and has a producer good for 80 bbls. The Ellis sand was found cemented pretty hard in the second well and this is thought to account for the small production.

The Treasure State Oil Co. has a well on Section 25-35-2 in the Ellis sand and good for 100 bbls. This well is located on the southeast part of the middle pool and found the sand at 1,503 feet, somewhat deeper than is generally expected in the wells in that part of the field. The Sunburst Field wells are generally referred to as being 1,500 feet deep, but the average for the field is under that figure, being around 1,480 feet.

The sale of the leases of the California Oil Co., consisting of 540 acres of land and four producing wells with a total production of 100 bbls., was held as advertised on March 17, but the low bids received were refused by the receiver and the property will be sold at private sale. The highest bid was of $8,000 from the Chicago Oil Co. and this bid considered only 240 acres and the wells of the property. This property is located in the Poison Spider Field, in Natrona County, Wyoming, and the production is black oil, which is sent through the Fargo Oil Co.'s line to Casper where it is handled by the Standard of Indiana at the refinery here.

The Kinney Coastal Oil Co. started the rotary tools at its second test on Dry Creek about 50 miles north of Riverton, in Fremont County. The well had been drilled with standard tools to about 2,000 feet, but the nature of the strata prevented good work with cable tools so a rotary was brought in. The hole is now about 1,800 feet deep due to caving and the rotary is a heavy one, brought to the well with the expectation of drilling through all sands to about 4,500 feet.

The Torchlight Oil Co. is preparing to drill several wells this season in the Torchlight Field in the Big Horn Basin. Recently this company, which has its headquarters in Chicago, took over the holdings of the Bruce Holding Co. and the Twenty-Four Oil Co. in the Torchlight area and now has some 4,000 acres under lease or contract.

Field Runs

Salt Creek	52,690
Teapot	1,500
Big Muddy	3,480
Grass Creek	2,830
Elk Basin	700
Greybull	15
Rock River	3,050
Lance Creek	2,140
LaBarge	200
Poison Spider	310
Osage	350
Hamilton Dome	1,290
Lander	210
Byron	15
Lost Soldier	4,260
Ferris	50
Simpson Ridge	230
Cat Creek	2,990
Sunburst	17,500
Lake Basin	120
Florence	400
Moffat	3,860
Tow Creek	110
Fort Collins	2,405
Iles Dome	95
Boulder	25
Rangeley	150
Hogback	500
Rattlesnake	400
Artesia	3,010
Total	104,835

KANSAS FIELDS

(Continued from Page 123)

was rigging up tools in its No. 10, C SW SE NW, same section (corrected location.)

The Jennings Brothers had a 150-bbl. well in their No. 7, CWL SW SE, Section 33-22-11. Sand at 1,800-1,923 feet was shot wits 140 quarts. In the same section, the York State Oil Co. had a machine in place for its No. 8 Westcott, CSL SE SW NW.

Fisher & Lauck completed No. 1, C NE NW NW, Section 4-22-12, Madison district, as a 150-bbl. producer after shooting it with 80 quarts in sand at 1,882-1,925 feet, and had a rig on the ground for No. 2, C SE NW NW, Section 4. Simmons and the Pulaski Oil Co. spudded their No. 1, C NE NE SW same section.

The Skelly Oil Co. had a rig up for No. 1 Yeager, C NE NE NW, Section 4-23-11.

The Theta Oil Co. was drilling its No. 12 Souder, CWL SW, Section 3-23-13, at 1,400 feet and had a rig under construction for No. 13, CWL NW SW, same section. The Haverhill Petroleum Co. was drilling No. 5 Imthurm, C NE NE NE, Section 9-23-13, at 400 feet. Shaffer & Howell were below 1,370 feet in their No. 13 Schneider, C SE NW NW, Section 15-23-13. The Mission Oil Co. completed its No. 1, C NW NE SW, Section 27-23-13, for 35 bbls. after a 120-quart shot in sand at 1,739-76 feet.

Braden Brothers & Darby had a rig up for their No. 5 Clark, C NW NE NE, Section 27-22-13.

Agard Pool

In the Agard Pool, the Arkansas Fuel Co. was drilling its No. 14, C N half SW, Section 1-24-9, at 850 feet.

Starkee was drilling at 1,400 feet in his No. 1 Diebert, C SE SE NW, Section 18-25-11. Roth & Faurot were drilling at 480 feet in their No. 1 C NE SE SE, Section 35-25-11.

In the old Sallyards district, the Kinney Oil Co. had a rig up for No. 7 Hull, C NE SE NW, Section 10-26-8.

The Continental Oil Co. had a rig in place for No. 2 Birkett, C SE NE NE, Section 23-26-9, and the Beacon Oil Co. was building a rig for No. 4 Wershing, C SW SW NW, Section 24-26-9.

Roth & Faurot abandoned their No. 1, C NW NW SW, Section 1-26- 11 as dry at 680 feet.

The Prairie Oil & Gas Co. spudded its No. 1 Friend, C NW NE SE, Section 7-27-13.

Kingman County

Southeast of the town of Kingman, in the same county, H. Patton was spudding No. 1, C SE, Section 35-28-7w.

In the next township west, the Phillips Petroleum Co. was spudding its No. 1, C NW, Section 16-28 8w, at 200 feet.

Sumner County

In northwestern Sumner County, the Sparta Drilling Co. abandoned the rig for its No. 1, C SE SW SW, Section 35-31-4w.

Cowley County

In the Winfield Pool of Cowley County, the J. A. Hull Co. spudded its No. 3, C NE SW NW, Section 24-32-4 and had a rig on the ground for No. 15 Wallace, C NE SE SE, same section.

Duffield and others' No. 2, C NW SW SW, Section 19-32-5, was flowing 75 bbls. from sand at 3,027-3-103 feet. It was to be shot.

Northeast of Arkansas City, Rosenthal and others were deepening an old well, No. 1, in the C NW SE, Section 14-34-4, at 2,005 feet.

BUNKER OIL SUPPLY FOR OCEAN STEAMERS

WASHINGTON, D. C., Mar. 20.—The Mineral Division of the Department of Commerce, states that American ports supplied 42,824,936 bbls. of Bunker oil in 1925 to vesse's engaged in foreign trade, a slight decrease from the 1924 total of 43,327,775 bbls. This is, however, a considerable increase over the 37,581,845 furnished in 1923.

The most marked increase in individual customs districts is shown in the Maine and New Hampshire district, which rose in two years from 1,207 bbls. to 29,751. Some of the southern Atlantic districts, including Virginia and Florida, have decreased in this trade through the past two years.

REFINING AND MARKETING

ENID JOBBER BELIEVES MARKET HARMED BY QUANTITY DISCOUNTS

By L. A. Warren

I do not know of anything that has been more thoroughly discussed than the present quantity discount contracts, which have been circulated and signed in such wholesale quantities by all major companies that now there is hardly a customer, whether an individual, filling station man or consumer, who is not protected by some company with a contract.

In my opinion this is no less than a wholesale policy of giving discounts indiscriminately. The contract distinctly states that certain discounts are allowed if quantity deliveries are taken out in a period of 30 days. I also understand that contracts are put into effect possibly to meet what was supposed to have been a rebating policy which was in force by smaller organizations or organizations which did not care to advertise their open policy in selling their commodities.

The contracts have developed a wholesale unethical rebating and discounting policy throughout the territory. The small jobber who is not in position to protect and operate a contract policy is doing his best to meet these conditions and therefore he is giving secret discounts.

It has been my experience that when exceptions to the general rule or to an established schedule is taken into consideration it always jeopardizes and tears down the legitimate sales policy of marketing goods. The tank wagon price throughout the territory should be an established tank wagon market and should be considered the lowest price at which a consumer could buy his commodity. If such is the case the tank wagon price must be raised to protect unethical quantity discount contracts.

This contract has been the result of a great many private filling stations being built. It has also encouraged the small operator or the small jobber to meet these conditions by separate concessions. It has given the large consumer the advantage over the small consumer. The large filling station has been able to receive a greater discount for the purchase of his commodity than the smaller one. In this way the oil jobber who protects a filling station of large gallonage by a greater discount is certainly discriminating against the small filling station.

I am greatly in favor of quantity purchases where the original material is sold. If a jobber is in position to buy a quantity of tank cars of gasoline or kerosene. I believe the refiner should be justified in selling him according to the amount he buys, if this is the refiners' policy. But, when the large jobber retails his gasoline in small tank wagon deliveries, he has not the right to jeopardize the small order. Also he is not justified in making greater discounts to one man than he is to another, simply because he receives more deliveries during the day than the other man does. This, in my opinion, is a true form of discrimination and should be eliminated.

REBATE CONTRACT PLAN DISCUSSION FEATURE OF NEXT N. P. M. A. MEETING

CHICAGO, Mar. 20.—The rebate contract plan and the need of a legal department will be two of the principal subjects discussed at the Spring Industrial Conference of the National Petroleum Marketers Association to be held at the Congress Hotel here April 6, 7 and 8. As is the custom of the association the meetings will be devoted to the discussion of practical problems rather than the presentation of prepared papers.

On the first day business sessions will start at 10 a. m., 2 p. m. and 8 p. m. Each session will last two hours. The business sessions of the second day will start at the same time except that there will be no 8 p. m. session. On that night a banquet and dinner dance will be held. On the last day of the convention business sessions will be held at 10 a. m. and 1:30 p. m.

In commenting on the Rebate Contract Plan the questions are asked of the members, "Is it constructive and intelligent, or is it insidious industrial poison gas? Shall we take the steps necessary to destroy it for the vile, demoralizing thing that it has become, or shall we wallow along in the same industrial gutter with it?"

The second problem, is "shall the organization establish a legal department in the charge of an able, aggressive fighting attorney, ready at all times to take immediate steps to protect our collective interests?" In this connection President Nicholas states they have a very able lawyer analyzing some of their present problems. He believes many of the present practices are vicious and illegal. This lawyer is to be present and explain what these practices are.

The third feature will be the present advertising and merchandising program of the association which will be presented and explained. In announcing the meeting which will be held at the Congress Hotel on April 6, 7 and 8, the statement is made that it will be the most interesting and spectacular discussion of problems confronting the independent industry that has been held since the meeting of July 26, 1923, when attention was called to the crude oil price structure and the danger of pegging prices without regard to the law of supply and demand.

MARLAND PURCHASES DERBY OIL STATIONS

One of the largest transactions involving marketing facilities in several months was consummated during the past week when the Marland Refining Co., of Ponca City, Okla., purchased the bulk and retail distributing facilities of the Derby Oil Co., of Wichita, Kans. The deal involves 160 bulk and service stations located in Kansas, Missouri, Nebraska, Colorado and Oklahoma. The purchase does not include the Wichita, Kans., refinery or the producing properties of the Derby company.

The purchase further strengthens the position of the Marland company in the distributing end of the oil business. The company now owns approximately 400 bulk and service stations. With the Derby stations the company for the first time will have retail facilities in Wichita, Kans., Denver, Colo., Omaha, Nebr., Kansas City, Mo., and St. Louis, Mo. The Derby company in expanding its distributing facilities in most instances built its stations in the large consuming centers and along the main national highways. One chain of stations extends along the Santa Fe trail from Kansas City to Denver.

USING HIDDEN TANK TO TEST LUBRICANTS

KANSAS CITY, Mo., Mar. 22.—Under auspices of the Better Business Bureau, tests are being made of lubricating oil sold by various dealers in Kansas City and this vicinity. An investigator is collecting the samples in a hidden auxiliary tank, into which the oil is poured instead of the crankcase, without the knowledge of the dealer. At leisure the investigator analyzes the oil.

The tests are being made as a result of reports that many unreliable dealers are supplying motorists, especially tourists, with old oil which has been strained, or with poor grades in place of higher grades called for.

N. P. A. SEMI-ANNUAL MEETING NEXT MONTH

The semi-annual meeting of the National Petroleum Association will be held at Cambridge Springs, Pa., April 15 and 16, according to an announcement of the past week by O. P. Keeney, president of the association. The two day meeting will be devoted to the presentation of papers and discussions of interest to refiners. The complete program will be announced in the near future.

RAILROADS USED LESS FUEL OIL DURING 1925

Fuel oil consumption by railroads in the United States decreased 2,483,000 bbls. during 1925, according to statistics compiled by the American Petroleum Institute. The total consumption during the year amounted to 59,355,000 bbls., while during 1924, 61,738,000 bbls. were consumed.

In the five districts classified by the institute, only in one did railroads burn more fuel oil during 1925 than in 1924. That district comprised the southern states, in which 2,278,000 bbls. were used in 1925, compared to 1,470,000 bbls. in 1924.

The district in which the greatest amount of oil was burned by railroads was in the middlewestern and southwestern states. There 27,386,000 bbls. were consumed. This was a decrease of 1,767,000 bbls. from the figures of 1924.

Of the total consumption by railroads, 54,075,000 bbls. was fuel oil from domestic crude, while 5,280,000 bbls. was foreign oil. This indicated a marked increase in the use of domestic oil at the expense of the foreign product.

The complete table as compiled by the American Petroleum Institute, showing fuel oil consumed by railroads of the country, follows:

District—	1925 (Thousands of Bbls.) Dom.	Foreign	Total
Eastern	7	107	114
Southern	....	2,278	2,278
Middlewestern and southwestern	24,573	2,813	27,386
Southwestern Pacific	22,940	....	22,940
Northwestern	6,555	82	6,637
Total	54,075	5,280	59,355
	1924		
Eastern	7	124	131
Southern	....	1,470	1,470
Middlewestern and southwestern	21,049	8,104	29,153
Southwestern Pacific	23,924	....	23,924
Northwestern	6,542	518	7,060
Total	51,522	10,216	61,738

Fuel oil consumed in road service by railroads having annual operating revenues above $1,000,000 totaled 49,624,000 bbs. in 1925, compared with 49,979,000 bbls. in 1924; according to the Interstate Commerce Commission. The I. C. C. report, classifying consumption by railroad districts, follows:

	(Thous. Bbls.) 1925	1924
Eastern district:		
Great Lakes region	99	116
Southern district:		
Southern region	1,824	1,218
Western district:		
Northwestern region	5,092	5,436
Central western region	24,481	24,246
Southwestern region	18,128	18,963
Total, United States	49,624	49,979

OKLAHOMA GALLONAGE STEADILY INCREASING

OKLAHOMA CITY, Okla., Mar. 20.—During 1925 there was inspected in Oklahoma 176,753,177 gallons of gasoline, from which $5,143,517 in tax was collected by the state, according to compilations made of the year's business by the inspection bureau of the corporation commission. The amount collected was an increase over that of 1924 by $1,956,482. However, until March 24 in 1925, a tax of 2½ cents per gallon was collected and after that date a tax of 3 cents per gallon.

Inspections were made in January of 1926 of 14,935,738 gallons of gasoline which was an increase of 4,000,000 gallons over the quantity inspected in January of 1925. December, 1925, inspection totaled 16,912,603, and the total was probably the largest of any December in the life of the bureau.

MAY REOPEN LINCOLN CASE

LINCOLN, Neb., Mar. 22.—The State Supreme Court has consented to listen to oral arguments concerning the merits of rehearing the Lincoln municipal filling station case. The arguments will be heard April 19. This will be done on petition of the Standard Oil Co. of Nebraska for a rehearing of the case, in which the court recently decided that operation of the municipal station was legal.

STOCKS OF GASOLINE UP MILLION GALLONS

Liquid stocks at refineries east of California increased 2,607,000 bbls. during the month of February, according to the American Petroleum Institute's survey covering 61 per cent of the operating capacity. The only decrease reported was in foreign crude oil and gas and fuel oil stocks. Gasoline stocks increased over 1,000,000 bbls.

Following is the report covering changes in stocks during the month:

	Bbls. of 42 Gals. Increase	Decrease
Domestic crude oil	2,394,000	.....
Foreign crude oil	.....	398,000
Oil for rerunning	42,000	.....
Gasoline	1,089,000	.....
Kerosene	293,000	.....
Gas and fuel oil	.....	1,306,000
Lubricating	145,000	.....
Miscellaneous	348,000	.....
Total	4,311,000	1,704,000
Deduct	1,704,000	.....
Net Increase	2,607,000	.....

COURT ASKED FOR REHEARING

LINCOLN, Neb., March 20.—The Standard Oil Co. of Nebraska has filed a petition with the State Supreme Court asking a rehearing on the decision handed down last month holding the operation of the Lincoln municipal filling station legal. The company charges that the court misconceived and misapplied the law applicable to the case.

STINNES' ANTI-KNOCK FUEL

According to the Boersen Zeitung a new anti-knock motor fuel has just been brought on the market by the Hugo Stinnes Oil Aktiengesellschaft of Berlin, states a report to the Department of Commerce. A fraction of a percentage of this substance, combined with ordinary gasoline, is said effectually to prevent knocking in motors or the formation of carbon.

NATURAL GASOLINE STORAGE

RIOW Constructed Shop Erected Tanks

Can be Easily Moved

Low Cost per Barrel to Build and Install

Quick Delivery and Installation

Graver Builds

Tanks
- *Welded*
- *Riveted*
- ~~Bolted~~
- *(Riveted, Inside & Outside Welded)*
- *Structural Supports*
- *Tower Tanks*
- *Standpipes*
- *Any Size Tanks Erected Anywhere*

Refinery Equipment

Jenkins Cracking Process

Stacks-Breechings

General Steel Plate Construction

Water Softeners
- *Hot Process*
- *Cold Process*
- *Zeolite*
- *Household*

Filters—Pressure

Purifying Systems for Swimming Pools

Founded 1857

GRAVER Corporation

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Brief Items for Plant Operators

PRESENT TWENTY-FIVE PAPERS AT MEETING OF PETROLEUM DIVISION

Twenty-five papers, dealing with all the more important recent developments in petroleum technology, will be presented at the meeting of the petroleum division of the American Chemical Society, which will be held at Tulsa April 5, 6, 7 and 8. The papers represent the work of 41 of the leading scientists engaged in petroleum research work. In the opinion of Dr. G. A. Burrell, secretary of the petroleum division, the papers constitute the "most comprehensive presentation of petroleum technology ever given before any convention."

Other divisions of the American Chemical Society will also meet at Tulsa. The society has a membership of 15,000 chemists and a large attendance is expected, especially from southwestern points.

A brief summary of the papers to be read at the meeting of the Petroleum Division of the American Chemical Society in April, follows:

"The Determination of the Unsaturated, Aromatic Naphthene and Paraffin Hydrocarbons in Motor Fuels and Their Automotive Equivalents," by Gustav Egloff and Jacque C. Morrell. Presents a method of determining the amount of paraffin, olefine, naphthene and aromatic hydrocarbons in gasoline. The gasoline is first washed with 80 per cent sulfuric acid, the naphthenes determined by the aniline method, the aromatics by nitration and the paraffins by difference. Analyses of synthetic mixtures and of various gasolines are shown, also motor tests of the knocking properties of the gasoline.

"The Design of Treating Equipment," by Jacque C. Morrell and Donald J. Bergman. Covers the design of a continuous treating system for cracked distillates and the procedure in using same.

"Cracking of Shale Oil and Types of Motor Fuel Obtained Therefrom," by Jacque C. Morrell and Gustav Egloff. Covers the cracking of shale oil, yields, character and percentage composition of the different hydrocarbon groups in the gasolines, and method of treating the cracked distillate.

"The Cracking of Smackover Heavy Crude Oil to Produce Motor Fuel of Anti-Knock Properties," by Gustav Egloff and Jacque C. Morrell. Shows the yield of motor fuel from cracking Smackover crude oil, the character of the motor fuel produced, with its percentage of different hydrocarbon groups and its anti-knock properties.

"The Life of Fullers Earth Used in the Vapor Phase Treatment of Cracked Distillates," by M. R. Mandelbaum and P. S. Nisson.

(Contribution from the Gray Industrial Laboratories.) Laboratory experiments conducted on the recovery of Fuller's Earth used in the vapor phase treatment of cracked gasoline show that after the fourth reburning, fifth use, the earth has deteriorated but little, if at all, for vapor phase use. Large runs in steel equipment were checked against small runs in glass for each burning. Figures on yield, color, color stability and gums, copper and glass dish, are given for the product of each run.

"A Method for the Precise Determination of Aromatic Hydrocarbons in Gasoline," by A. M. Erskine, Hamilton College, Clinton, N. Y. A lowering of the critical solution temperature of gasoline and nitrobenzene by the presence of aromatic hydrocarbons is directly proportional to the percentage by weight of the latter. The fractionation and removal of the aromatics by sulfonation are carried out as in Tizard and Marshall's "Aniline Point" method. In the proposed method the solubility temperature of equal weights (the critical proportions) of each fraction and nitrobenzene is observed before and after sulfonation. The rise in the solubility temperature multiplied by the proper proportionality factor gives the percentage of benzene, toluene, and xylene in the corresponding fraction within 0.1 to 0.2 per cent, as shown by test analyses on synthetic mixtures.

"The Aromatic Hydrocarbon Content of Natural Gas Gasoline," by A. M. Erskine, Hamilton College, Clinton, N. Y. The presence of small amounts of benzene, toluene, and meta-xylene in a sample of Pennsylvania absorption natural gas gasoline has been proved by fractionation, concentration of each aromatic by extraction with liquid sulfur dioxide, and identification as the corresponding dinitro or trinitro derivative. Quantitative determinations on the fractions using the "Nitrobenzene Critical Solution Temperature" method showed that the original sample contained 0.6 per cent benzene, 0.6 per cent toluene, and 1.2 per cent m-xylene by weight.

"Color and Gumming Constituents in Shale Gasoline," by Robert A. Baxter. A study of shale gasoline has been made to determine the nature of the components therein which cause the gumming and color and to indicate possible methods of treatment of the gasoline to stabilize it without the excessive losses which are unavoidable in the sulfuric acid treatment. Evidence collected indicates pretty conclusively that the phenomenon of color and gum formation is primarily one of oxidation. The several stages in the transformation of the color and gum forming bodies to the insoluble gums has been traced from the slightly colored oil soluble material, through the oil insoluble but alcohol soluble colored materials to the oil and alcohol insoluble oxidation products.

"Cracking Liquid Petroleum Oils," by E. H. Leslie and E. H. Potthoff, University of Michigan. The effect of temperature, pressure, and time as independent variables in the cracking of liquid petroleum oils was investigated. Three oils

(Continued on Page 139)

NEW REFINERY PROJECT BY TORONTO COMPANY

CHATHAM, Ont., Mar. 20.—A new refinery project is being undertaken at Tillsonburg, Ont., by the Regal Oil Refinery Co. of Toronto. A party including W. B. Brooks, president, and Lewis Frickman, vice president, and surveyors of the Canadian National Railways visited Tillsonburg in connection with the project. A 50-acre site adjoining the Wabash Railroad has been secured, and a contract signed with the C. N. R. for two sidings. Material will be put on the ground at once for the erection of two units of the refinery to operate by August 1. Another two units are planned to be erected within 12 months, the four units involving an estimated outlay on buildings and equipment of $1,000,000.

NEW SIGNAL HILL PLANT

The Ahlberg Gasoline Co. of Los Angeles, Calif., has started the construction of an absorption gasoline plant in the Signal Hill Field. The plant, which will have a capacity of 5,000,000 feet of gas daily, will obtain its gas supply from the northwest extension of the field. It is understood the company expects to build other plants in California.

AMONG THE TECHNICAL MEN

Although still comparatively young, A. J. Smith, manager of refinery operations of the Paragon Refining Co., at Toledo, Ohio, is a man of varied experiences in all phases of refining and oil engineering. His ability was amply demonstrated in his work of rebuilding the Paragon plant after it had been swept by two disastrous fires.

A. J. Smith

Mr. Smith has been with the Paragon Refining Co. since 1924. Previously he was employed by the Cross Engineering Co. as supervising engineer on construction, inspection and operation of the Cross cracking processes.

Starting work while still a student in high school and college, Mr. Smith received his basic experience at the Sugar Creek, Mo., refinery of the Standard Oil Co. of Indiana. He worked only part time while going to school but after his graduation he was given a permanent position at the plant.

Mr. Smith left the Standard Oil Co. to take the managership of an electric light and power company in his home town, but, although successful at this, it was not long before he returned to the refining industry. He entered the employ of the Sinclair Refining Co. and supervised the installation of a battery of Isom pressure stills and other refinery equipment at the Argentine, Kans., plant. It was after creditable service with the Sinclair Refining Co. that he went with the Cross Engineering Co. and later the Paragon Refining Co., with which company he now is connected.

Attending the University of Kansas at Lawrence, Mr. Smith studied mechanical and electrical engineering. He was born in Independence, Mo.

TANK CAR ACCIDENTS FROM RULE VIOLATION

Tank cars, most of which were used in the transportation of petroleum products, were responsible for 347 out of a total of 1,519 accidents occurring in the handling of all types of shipping containers during 1925, according to the annual report of the chief inspector of the Bureau of Explosives which has just been made public.

Tank car accidents during the year resulted in the death of 12 persons, injuries to 21 others, and property damage of $802,500, according to the report. The deaths represented more than 90 per cent, the injuries 37 per cent and the property loss 78 per cent of the totals occurring in the transportation of dangerous articles.

The report points out that nearly all the tank car accidents were the result of violations of rules for shipping and defiance of warnings issued repeatedly by the Bureau of Explosives. Antiquated or defective equipment, however, were responsible for some of the accidents.

Out of the total, 5 persons were killed and 11 injured because dome covers were not securely replaced on empty tank cars by the use of a bar or wrench as required by the commission's regulations. Two persons were killed, four injured and property loss of $62,803 caused by insecurely closed dome covers on loaded tank cars and the failure to provide proper protection in dome loading and unloading pipes on loaded cars, the hazard of transferring contents of cars through open domes, and the hazard of removing dome covers while internal pressure exists in the tanks.

Bottom outlet valves were the cause of 138 during the year. These resulted in property loss amounting to $138,802, and injuries to one person. The equipping of 2,000 cars with improved types of outlet valves may have prevented some accidents from this cause but 98 per cent of all tank cars in service are equipped with the old type of valves.

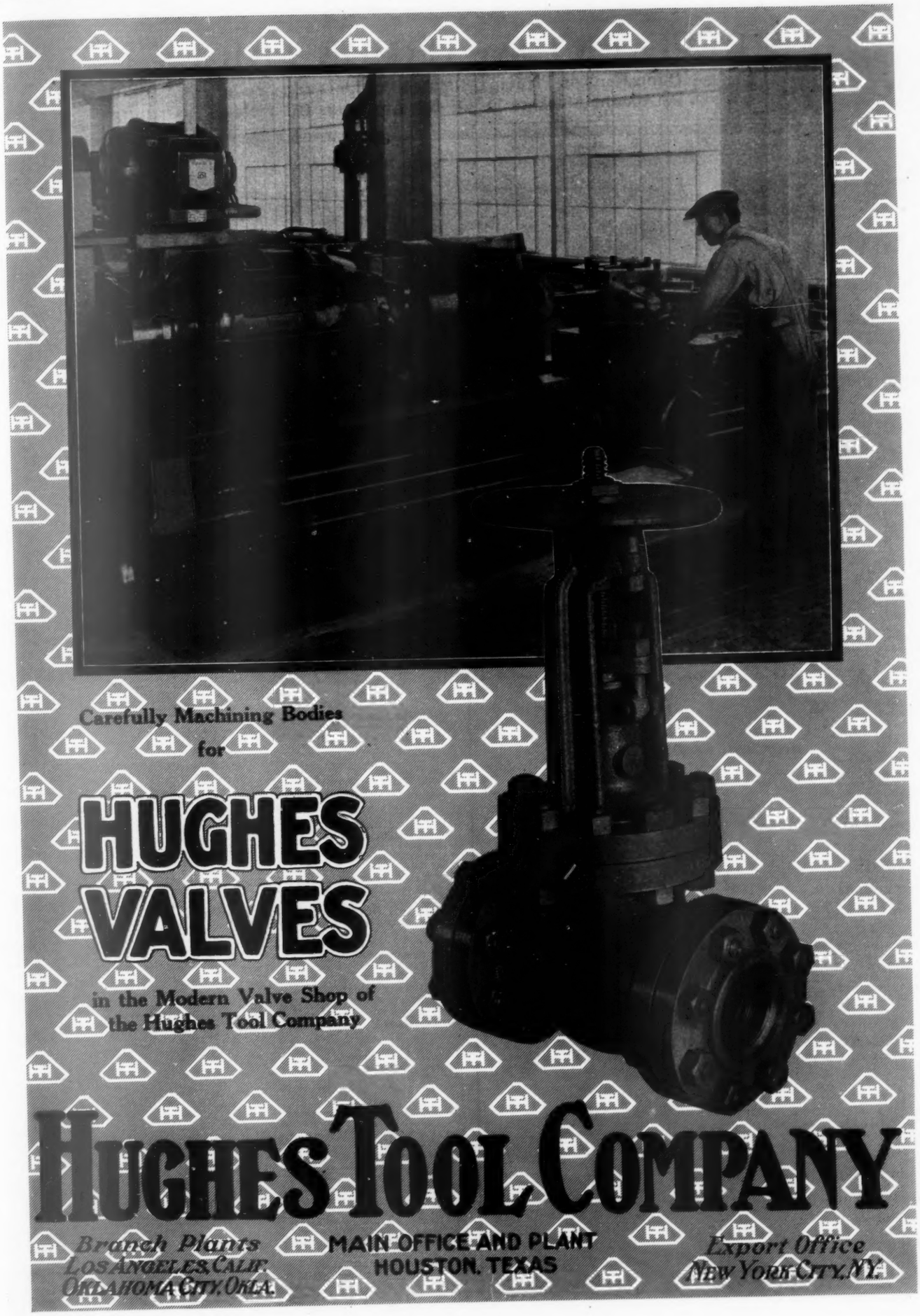
Five or six improved types of bottom discharge outlet valves are available but relatively few have been applied to new tank cars, the bureau report stated. However, revised specifications for valves which went into effect March 1 require that the new valves be installed. The new valves are locked securely in their seats in a manner which prevents side lifting of the valve or displacement of the valve when the bottom outlet is broken off from various causes.

Six accidents involving injury to or leakage at the safety valves were reported as causing a property loss of $41,440. However, no reports of accidents due to failure of valves to relieve pressure, nor of personal injuries due to ignition of vapors, were received.

In regard to empty tank cars, the bureau explains that it does not believe dome cover accidents will be entirely eliminated unless some mechanical means is provided to prevent removal of dome covers by unauthorized persons. The bureau also urges oil companies to equip their cars with some means for loading and unloading without the removal of the dome cover, pointing out that this would result in greater economy and the elimination of causes of many accidents the past year.

ADDS CRACKING UNIT

An additional cracking unit is being installed at the plant of the Lemont Refining Co., at Lemont, Ill., according to J. F. Donnelly, superintendent. The new unit is of the company's own design and will have a capacity of 1,000 bbls. daily. The plant already has a capacity of 1,500 bbls. of crude daily.


Carefully Machining Bodies
for
HUGHES
VALVES
in the Modern Valve Shop of
the Hughes Tool Company
HUGHES TOOL COMPANY
Branch Plants
Los Angeles, Calif.
Oklahoma City, Okla.
MAIN OFFICE AND PLANT
HOUSTON, TEXAS
Export Office
New York City, N.Y.

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

GASOLINE AND NAPHTHA

	Mar. 23		Mar. 16		Mar. 9	
OKLAHOMA (Group 3)—						
50-52 450 end point	.09¼	.09⅜	.09	.09¼	.09¼	.09½
56-58 450 end point	.09½	.09¾	.09¼	.09½	.09⅜	.09⅝
58-60 437 end point (U. S. Motor)	.10	.10¼	.09¾	.10	.09¾	.10
60-62 400 end point	.11	.11¼	.11		.11⅛	.11¼
64-66 375 end point	.12	.12¼	.11⅞	.12	.12⅛	.12¼
68-70 360 end point	.12⅞	.13	.12¾	.13	.13	.13¼
KANSAS—						
58-60 437 end point (U. S. Motor)	.10¼	.10½	.10	.10¼	.10	.10¼
NORTH TEXAS—						
48-50 450 end point (Naphtha)	.09	.09¼	.08⅞	.09	.09	.09⅛
50-52 450 end point (Naphtha)	.09⅛	.09⅜	.09	.09⅛	.09	.09¼
56-58 450 end point	.09½	.09⅝	.09¼	.09⅜	.09¼	.09½
58-60 437 end point (U. S. Motor)	.10		.09⅝	.09⅞	.09¾	.10
60-62 400 end point	.11¼	.11⅜	.10⅞	.11	.11¼	.11⅜
64-66 390 end point	.12	.12¼	.11½	.11¾	.12	.12¼
64-66 375 end point	.12¼	.12½	.11⅝	.12	.12¼	.12⅜
68-70 360 end point	.13		.12⅝	.13	.12¾	.13
NORTH LOUISIANA—						
56-58 450 end point	.09½	.10	.09¼	.09½	.09½	.09¾
58-60 437 end point (U. S. Motor.	.10	.10½	.10	.10¼	.10	.10¼
60-62 400 end point	.11¼	.11½	.11	.11¼	.11⅜	.12
64-66 390 end point	.12	.12¼	.12	.12¼	.12¼	.12½
64-66 375 end point	.12¼	.12½	.12¼	.12⅜	.12½	.12⅝
ARKANSAS—						
58-60 450 end point	.09¾	.10	.09½	.09¾	.09⅞	.10
58-60 437 end point (U. S. Motor)	.10¼		.10		.10¼	
64-66 375 end point	.12½	.12¾	.12	.12¼	.12½	.12¾
ROCKY MOUNTAIN STATES—						
*58-60 437 end point (U. S. Motor)	.13	.13¼	.12¾	.13	.12⅞	.13
PENNSYLVANIA—						
52 Naphtha	.11¼	.11½	.11¼	.11½	.11¼	.11½
54 Naphtha	.11½	.11¾	.11½	.11¾	.11½	.11⅞
56 Naphtha	.12	.12¼	.12	.12¼	.12	.12¼
58 Naphtha	.12½	.12¾	.12½	.12¾	.12½	.12⅞
60 Gasoline	.13¼	.13½	.13¼	.13½	.13¼	.13½
62 Gasoline	.13¾	.14	.14	.14¼	.14	.14¼
64 Gasoline	.14¼	.14½	.14½	.14¾	.14½	.14¾
66 Gasoline	.16¼	.16½	.16¼	.16½	.16¼	.16½
68-70 Gasoline	.19½	.19¾	.19½	.19¾	.19½	.19¾
CALIFORNIA—						
54-58 437 end point (U. S. Motor) dom.	.12½	.13	.12½	.13	.11	.11½
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 end point (Naphtha)	.09¼		.09¼		.09¼	.09½
56-58 450 end point	.09⅜	.09½	.09¼	.09½	.09⅜	.09½
58-60 437 end point (U. S. Motor)	.10	.10¼	.09¾	.10	.09¾	.10
60-62 400 end point	.11	.11¼	.11¼	.11½	.11¼	.11½
64-66 375 end point	.12		.12	.12¼	.12¼	.12⅜
68-70 360 end point	.12¾	.13	.13	.13¼	.13	.13½

*Colorado points.

NATURAL GASOLINE

	Mar. 23		Mar. 16		Mar. 9	
OKLAHOMA (Group 3)—						
Grade D'bl. A, 80-87.9, 375 e.p. rec. 90%	.08¾	.09	.08¾	.09	.09½	.09¾
Grade A, 72-79.9, 375 e.p., rec. 90%	.09		.09		.09½	.09¾
Grade D'bl. B, 84-92, 375 e.p., rec. 85%	.08	.08¼	.08¼	.08½	.08¾	
Grade B, 76-83.9, 375 e.p., rec., 85%	.08¼	.08½	.08½		.08¾	
Grade C, 80-90, 375 e.p., rec. 78%	.08		.08	.08¼	.08½	.08¾
NORTH TEXAS—						
Grade D'bl. A, 80-87.9, 375 e.p. rec. 90%	.08¾	.09	.09		.09½	.09¾
Grade A, 72-79.9, 375 e.p., rec. 90%	.08¾	.09	.09		.09½	.09¾
Grade D'bl. B, 84-92, 375 e.p., rec. 85%	.08¼	.08½	.08¼	.08½	.08¾	.09
Grade B, 76-83.9, 375 e.p., rec. 85%	.08¼	.08½	.08¼	.08½	.08¾	.09
Grade C, 80-90, 375 e. p., rec. 78%	.08		.08	.08¼	.08¾	
NORTH LOUISIANA—						
Grade A, 72-79.9, 375 e. p., rec. 90%	.09¾	.10	.09¾	.10	.10¼	.10½
Grade B, 76-83.9, 375 e. p., rec. 85%	.09½	.09¾	.09½	.09¾	.10	.10¼
Grade C, 80-90, 375 e.p., rec. 78%	.09	.09½	.09	.09½	.09¼	.09½
CALIFORNIA—						
78-85 absorption, 360-390 end point	.17	.17½	.17	.17½	.15	.15½
78-84 compression, 350 end point	.17	.17½	.17	.17½	.15	.15½
CHICAGO DISTRICT (Based on Group 3)—						
Grade D'bl. A, 80-87.9, 375 e.p. rec. 90%	.09	.09¼	.09½	.09¾	.09⅝	.09⅞
Grade A, 72-79.9, 375 e.p., rec. 90%	.09	.09¼	.09½	.09¾	.09⅝	.09⅞
Grade D'bl. B, 84-92, 375 e.p., rec. 85%	.08¼	.08½	.08¾		.08¾	.09
Grade B, 76-83.9, 375 e.p., rec. 85%	.08¼	.08½	.08¾		.08¾	.09
Grade C, 80-90, 375 e.p., rec. 78%	.08	.08¼	.08½		.08⅝	.08⅞

MOTOR NATURAL GASOLINE (BLENDS)

	Mar. 23		Mar. 16		Mar. 9	
OKLAHOMA (Group 3)—						
60-62 450 end point	.09½	.09¾	.09⅝	.09¾	.09¾	.10
64-66 437 end point	.09½	.09¾	.09¾	.10	.09⅞	.10
68-70 430-435 end point	.10	.10¼	.10	.10¼	.10¼	
NORTH TEXAS—						
64-66 437 end point	.09¾	.10	.09½	.09¾	.09⅞	
PENNSYLVANIA—						
*60-62	.12½	.12¾	.12½	.12¾	.12½	.12¾
*64-66	.12¾	.13	.12¾	.13	.12¾	.13
*66-68	.13		.13		.13	
*68-70	.13		.13		.13	
CHICAGO DISTRICT (Based on Group 3)—						
60-62 450 end point	.09½	.09¾	.09¾		.09¾	.10
64-66 437 end point	.09¾	.10	.10	.10¼	.10	.10¼

*At Sistersville, W. Va.

BURNING OIL

	Mar. 23		Mar. 16		Mar. 9	
KANSAS—						
41-43 water white Kerosene	.07	.07¼	.07¼	.07½	.07⅛	.07¼
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.06½	.06¾	.06¾	.06⅞	.06¾	.06⅞
42-44 water white Kerosene	.07	.07¼	.07¼		.07	.07¼
NORTH LOUISIANA—						
41-43 prime white Kerosene	.07¼	.07½	.07½	.07¾	.07½	.08
ROCKY MOUNTAIN STATES—						
*40-41 water white Kerosene	.09½	.09¾	.09¾	.09⅞	.09¾	.09⅞
NORTH TEXAS—						
41-43 water white Kerosene	.06¾	.07	.06⅞	.07	.06⅞	.07
42-44 water white Kerosene					.07⅛	.07¼
ARKANSAS—						
41-43 water white Kerosene	.07¼	.07½	.07¼	.07½	.07¼	.07½
PENNSYLVANIA—						
43 Kerosene prime white	.08	.08¼	.08	.08¼	.08	.08¼
45 Kerosene water white	.08½	.08¾	.08½	.08¾	.08½	.08¾
46 Kerosene water white	.09⅜	.09½	.09⅜	.09½	.09½	.09¾
47 Kerosene water white	.09⅞	.10	.09⅞	.10	.10	.10¼
34 Neutral	.07¾	.08	.07¾	.08	.07¾	.08
34 Sundebloom Neutral	.08¾	.09	.08¾	.09	.08¾	.09
36 Miners Neutral	.07	.07¼	.07	.07¼	.07	.07¼
300 Mineral Seal	.07¾	.08	.07¾	.08	.07¾	.08
CALIFORNIA—						
38-40 water white (high burning test)	.09	.010	.07½	.08	.07½	.08
Engine distillate, 43-45 445 end point	.11	.11½	.08½	.09	.08½	.09
Engine Distillate, 42-44 450 end point	.10¾	.11	.08¼	.08½	.08¼	.08½
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white Kerosene	.06⅝	.06¾	.06¾	.06⅞	.06¾	.06⅞
42-44 water white Kerosene	.07	.07⅛	.07⅛	.07¼	.07	.07¼

*Colorado points.

FUEL OILS

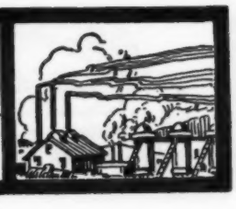
	Mar. 23		Mar. 16		Mar. 9	
KANSAS—						
24-26 Fuel Oil	1.40	1.45	1.30	1.35	1.25	1.30
32-36 Gas Oil	.04⅛	.04¼	.04	.04⅛	.03⅞	.04
38-40 Distillate	.04⅝	.04½	.04¼	.04½	.04¼	
OKLAHOMA (Group 3)—						
Below 22 Fuel Oil (sellers' cars)	1.20	1.22½	1.17½	1.20	1.15	1.17½
22-26 Fuel Oil (sellers' cars)	1.22½	1.25	1.20		1.17½	1.20
24-26 Fuel Oil (sellers' cars)	1.30	1.32½	1.25		1.22½	1.25
26-30 Fuel Oil (sellers' cars)	1.35	1.40	1.35	.140	1.35	
28-30 Fuel Oil (sellers' cars)	1.45	1.50	1.45	1.50	1.40	
32-36 Gas Oil (dark)	.04	.04⅛	.03⅞	.04	.03⅞	
32-36 Gas Oil (light)	.04	.04¼	.04		.03⅞	.04
36-38 Distillate	.04¼	.04⅜	.04½	.04¼	.04	
38-40 Straw Distillate	.04⅜	.04½	.04¼	.04⅜	.04⅛	.04¼
NORTH TEXAS—						
24-26 Fuel Oil (sellers' cars)	1.40	1.45	1.40	1.45	1.35	1.45
32-36 Gas Oil (dark)	.04		.03⅞		.03¾	.03⅞
32-36 Gas Oil (light)	.04	.04⅛	.03⅞	.04	.03⅞	
38-40 Straw Distillate	.04¼	.04⅜	.04⅛	.04¼	.04	.04⅛
NORTH LOUISIANA—						
18-20 Fuel Oil	1.20	1.25	1.20		1.20	
32-36 Gas Oil	.04⅛	.04¼	.04	.04⅛	.04	.04⅛
ARKANSAS—						
38-40 Distillate	.04¼	.04½	.04¼	.04½	.04	.04⅛
32-36 Gas Oil	.04		.04		.03⅞	.04
16-20 Refinery Fuel Oil	1.10	1.15	1.10	1.15	1.10	1.15
GULF COAST (South Texas)—						
Gas Oil	.05	.05¼	.05	.05¼	.05	.05¼
Fuel Oil	1.65	1.70	1.65	1.70	1.65	1.70
PENNSYLVANIA—						
30-34 Fuel Oil	.05¾	.06	.05¾	.06	.05¾	.06
36-40 Fuel Oil	.06	.06¼	.06	.06¼	.06	.06¼
CALIFORNIA—						
33-36 Distillate	.05¼	.05½	.04¾	.05	.04¾	.05
27-35 Distillate	.04½	.05	.04	.04½	.04	.04½
15-20 Fuel Oil (at tidewater)	1.00	1.04	1.00	1.04	1.00	1.04
27 plus Diesel	1.15	1.19	1.15	1.19	1.15	1.19
CHICAGO DISTRICT (Based on Group 3)—						
24-26 Fuel Oil (sellers' cars, Group 3)	1.30	1.32½	1.22½	1.25	1.20	1.25
22-26 Fuel Oil (sellers' cars)	1.25	1.27½	1.22½	1.25	1.22½	1.25
18-22 (El Dorado)	1.22½	1.25	1.15	1.17½	1.15	1.17½
18-20 (Smackover)	1.12½	1.15	1.10	1.12½	1.10	1.12½
32-36 Gas Oil	.04	.04¼	.03⅞	.04	.03⅞	.04
36-38 Distillate	.04¼	.04⅜	.04	.04⅛	.03⅞	.04
38-40 Straw Distillate	.04⅜	.04½	.04¼	.04⅜	.04	.04¼

LUBRICATING OILS AND WAX

	Mar. 23		Mar. 16		Mar. 9	
OKLAHOMA (Group 3)—						
70-80 vis., 2½ color, 20-25 cold test	.06	.07	.06	.07	.06	.06¼
100 vis., 3 color, 20-25 cold test	.06½	.07	.06½	.07	.06½	.07
100 vis., 2 color, 20-25 cold test	.07	.07½	.07	.07½	.07	.07½
150 vis., 4 color, 20-25 cold test	.09¼	.09¾	.09¼	.09¾	.09¼	.09¾
150 vis., 3 color, 20-25 cold test	.09½	.10	.09½	.10	.09½	.10
180 vis., 4 color, 23-28 cold test	.10	.10½	.10	.10½	.10	.10½
180 vis., 3 color, 23-28 cold test	.10¼	.10¾	.10¼	.10¾	.10¼	.10¾
200 vis., 4 color, 23-28 cold test	.11	.11½	.11	.11½	.11	.11½
200 vis., 3 color, 23-28 cold test	.10½	.11½	.10½	.11½	.11¼	.11¾
220 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
220 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
240 vis., 4 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
240 vis., 3 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
280 vis., 4 color, 25-30 cold test	.15½	.16½	.15½	.16½	.16	.16½
280 vis., 3 color, 25-30 cold test	.16¼	.17	.16¼	.17	.16¼	.17
180 vis., 5 color, 23-28 cold test	.09¾	.10¼	.09¾	.10¼	.09¾	.10¼
200 vis., 5 color, 23-28 cold test	.10¾	.11¼	.10¾	.11¼	.10¾	.11¼
220 vis., 5 color, 25-30 cold test	.14	.14½	.14	.14½	.14	.14½
240 vis., 5 color, 25-30 cold test	.13	.14	.13	.14	.13½	.14
280 vis., 5 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
Cylinder Stocks:						
180-200 vis., S. R. Green, 40-45 cold test	.08½	.11	.08¼	.11	.08½	.11
190-200 vis., S. R. Green, 40-45 cold test	.08	.08½	.08	.08½	.08	.08½
170-190 dark green, 40-45 cold test	.06	.06½	.06	.06½	.06½	.07
190-20 vis., @ 210 "D" Bright Stock	.33	.35	.33	.35	.33	.35

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields



200-210 vis., @ 210 "E" Bright Stock	.30	.31	.30	.31	.30	.31
150 vis. @ 210 "E" Bright Stock	.27	.28	.27	.28	.27	.28
150 vis. @ 210 "D" Bright Stock	.28	.31	.28	.31	.28	.31
Waxes:						
122-124 White Crude Scale Wax	.04¾	.05	.04¾	.05	.04¾	.05
PENNSYLVANIA—						
150, 3 color	.22		.22		.22	
180, 3 color	.26		.26		.26½	
200, 3 color	.28		.28		.28½	
220, 3 color	.30		.30		.29½	
600, steam refined	.16½		.16½		.18	
635, steam refined	.20		.20		.21½	
650, steam refined	.21½		.21½		.22½	
600, Pennsylvania flash	.27		.27		.27	
630, Pennsylvania flash	.36		.36		.36	
*550, E. filtered	.20¾		.20¾		.20¾	
600, E filtered	.21¼		.21¼		.21¼	
*600 E filtered	.22¾		.22¾		.22¾	
600, D filtered	.27½		.27½		.27½	
550, E filtered	.20		.20		.20	
550, D filtered	.22¼		.22¼		.22¼	
Pennsylvania Bright Stock	.37½		.37½		.38	
122-124 White Crude Scale Wax	.05⅝	.05½	.05⅝	.05½	.05¾	.05½
†124-126 White Crude Scale Wax	.05½	.05⅝	.05½	.05⅝	.05½	.05⅝

*At Warren, Pa. †At New York City.

GULF COAST (South Texas)—						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.07½	.08	.07½	.08	.07½	.08
No. 2½ color, 150 vis., pale oil	.10	.10½	.10	.10½	.10	.10½
No. 3 color, 200 vis., pale oil	.11	.11½	.11	.11½	.11	.11½
No. 3½ color, 300 vis., pale oil	.12½	.14	.12½	.14	.12½	.14
No. 3¾ color, 500 vis., pale oil	.15½	.16	.15½	.16	.15½	.16
No. 4 color, 750 vis., pale oil	.18½	.19	.19½	.20	.19½	.20
No. 1½ plus color, 150 vis., pale filtered	.22		.22		.22	
No. 2 plus color, 200 vis., pale filtered	.23½		.23½		.23½	
No. 2 color, 300 vis., pale filtered	.27½		.27½		.27½	
No. 2½ color, 500 vis., pale filtered	.31½		.31½		.31½	
No. 2½ color, 750 vis., pale filtered	.41½		.41½		.41½	
No. 5 to 6 color, 200 vis., red oil	.09½	.10	.09½	.10	.09½	.10
No. 5 to 6 color, 300 vis., red oil	.11½	.12	.11½	.12	.11½	.12
No. 5 to 6 color, 500 vis., red oil	.13	.13½	.13	.13½	.13	.13½
No. 5 to 6 color, 750 vis., red oil	.17	.18	.19	.19½	.19	.19½
CALIFORNIA—						
130 pale, 2½-3 color	.10	.11½	.10	.11½	.10	.10½
200 vis., 2½-3 color	.13½	.14½	.13½	.14½	.13½	.14½
300 vis., 3 -3½ color	.15	.16	.15	.16	.15	.16
350 vis., 3½-4 color	.16½	.17½	.16½	.17½	.16½	.17
400 vis., 3½-4 color	.18	.19	.18	.19	.18	.19
Red Neutrals:						
200 vis., 4½-5 color	.12	.13	.12	.13	.12	.13
300 vis., 5 -6 color	.13	.14	.13	.14	.13	.14
400 vis., 5 -6 color	.15	.16	.15	.16	.15	.16
500 vis., 4½-5 color	.18	.19	.18	.19	.18	.19
500 vis., 6 -6½ color	.16	.17	.16	.17	.16	.17
600 vis, 6½ plus color	.17	.18	.17	.18	.17	.18

Note: Bright stocks are not manufactured commercially on the Pacific Coast.

NEW YORK DOMESTIC MARKET

Bayonne Refinery Prices:	Mar. 23	Mar. 16	Mar. 9
U. S. Motor Gasoline, 58-60 437	.13	.13	.14
*Bunker Oil, 14-16 Be.	1.75	1.75	.175
*Diesel Oil New York City	2.30	2.30	2.30
Furnace Oil, New York City	.10	.10	.10
Gas Oil, 28 plus	.06	.06	.06
41-43 Kerosene prime white	.08½	.08½	.08½

*Lighterage 6.5c a barrel extra.

NEW YORK EXPORT PRICES

Motor Gasoline:	Mar. 23	Mar. 16	Mar. 9
58-60 Be. gravity, in cases	.27.90	.27.90	.28.15
Standard white Kerosene, in cases	.18.40	.18.40	.18.40
Water white Kerosene, in cases	.19.90	.19.90	.19.90
Export Gasoline, 64-66 Be.	.16	.16	.17
†Lubricating Oils (in bulk):			
Cylinder Stock, light filtered, 600 s.r.	.29	.29	.29
No. 5 Bright Stock, .897 spec. grav.	.40	.40	.40
No. 1 White Neutral, .878 spec. grav.	.35	.35	.35
Pale Oil, "25" .898 spec. grav.	.12	.12	.12
Pale Oil, "28" .892 spec. grav.	.07½	.07½	.07½
No. 3 red oil, 160 vis., 7 color	.10¾	.10¾	.10¾
No. 2 red oil, .903 spec. grav.	.11½	.11½	.11½
No. 1 red oil, 905 spec. grav., 265 vis.	.13	.13	.13
Polar red oil, .903 spec. grav., 295 vis.	.13½	.13½	.13½
Paraffin Wax:			
120-122 a.m.p., per lb.	.06⅛	.06⅛	.06⅛
125-127 a.m.p., per lb.	.06¼	.06¼	.06¼
130-132 a.m.p., per lb.	.06½	.06½	.06½
135-137 a.m.p., per lb.	.07⅛	.07⅛	.07⅛
Petrolatum, in bbls., car load lots, per lb.:			
Amber	.03⅜	.03½	.03½
Light amber	.03⅝	.03¾	.03¾
Cream	.06	.06	.06
Lily white	.08	.08	.08
Snow white	.09½	.10	.10

†All lub prices in barrels.

LOS ANGELES EXPORT PRICES

	Mar. 23		Mar. 16		Mar. 9	
Kerosene water white	.05	.05½	.05	.05½	.05	.05½
U. S. Motor Gasoline, 54-56 437 e.p.	.10	.11½	.10	.11½	.08	.09

CRUDE OIL PRICES

OKLAHOMA, KANSAS AND NORTH TEXAS

***Prairie Oil & Gas Co.**

(Oklahoma, Kansas and North and East Central Texas.)

28° to 28.9°	$1.40
29° to 29.9°	1.48
30° to 30.9°	1.56
31° to 31.9°	1.64
32° to 32.9°	1.75
33° to 33.9°	1.80
34° to 34.9°	1.88
35° to 35.9°	1.96
36° to 36.9°	2.04
37° to 37.9°	2.12
38° to 38.9°	2.20
39° to 39.9°	2.28
40° to 40.9°	2.36
41° to 41.9°	2.44
42° to 42.9°	2.52
43° to 43.9°	2.60
44° to 44.9°	2.68
45° to 45.9°	2.76
46° to 46.9°	2.84
47° to 47.9°	2.92
48° to 48.9°	3.00
49° to 49.9°	3.08
50° to 50.9°	3.16
51° to 51.9°	3.24
52° and above	3.32

*Other major purchasers except as noted below.

Champlin Refining

(Garber and Tonkawa)

Schedule based on Prairie Oil & Gas Co. paying 10 cents additional for each grade of crude above 38° gravity.

Humble Oil & Refining Co.

(North Texas, Ranger, Mexia, Powell, Richland, Wortham, Currie, Moran and Lytton Springs)

Below 25°	$1.08
25° to 25.9°	1.16
26° to 26.9°	1.24
27° to 27.9°	1.32

Other grades same as Prairie Oil & Gas Co.

Magnolia Petroleum Co.

(Oklahoma, Kansas and North and East Central Texas, except Corsicana heavy, and Lytton Springs of South Central Texas.)

Below 28°	$1.20

Other grades same as Prairie Oil & Gas Co.

Iatan	1.15
Corsicana heavy	1.15

Texhoma Oil & Refining Co.

(Wichita Falls, Texas, District.)

Below 32°	$1.88
32° to 32.9°	1.94
33° to 33.9°	2.00
34° to 34.9°	2.06
35° to 35.9°	2.12
36° to 36.9°	2.18
37° to 37.9°	2.24
38° to 38.9°	2.30
39° to 39.9°	2.36
40° to 40.9°	2.42
41° to 41.9°	2.48
42° to 42.9°	2.54
43° to 43.9°	2.60
44° and above	2.69

Gypsy Oil Co.

(Bristow, Glenn Pool, Morris and Perryman, Okla.)

25° to 25.9°	1.16
26° to 26.9°	1.24
27° to 27.9°	1.32

Other grades same as Prairie Oil & Gas Co.

TEXAS PANHANDLE

Kay County Gas Co.
Magnolia Petroleum Co.

Below 31°	1.15
31° to 33.9°	1.30
34° to 36.9°	1.50
37° to 39.9°	1.65
40° and above	1.70

GULF COAST

***Humble Oil & Refining Co.**

Grade A	1.50
Grade B	
Below 25°	1.25
25° to 25.9°	1.30
26° to 26.9°	1.35
27° to 27.9°	1.40
28° to 28.9°	1.45
29° to 29.9°	1.50
30° and above	1.55
Sour Lake (36° gravity)	1.79
Boling	1.50
Piedras Pintas (deep sand)	1.75
High Island	1.20

*And other major purchasers, including The Texas Co., and the Sun Oil Co.. High Island crude posted by the Sun Oil Co.

SOUTH CENTRAL AND SOUTHWEST TEXAS

***Magnolia Petroleum Co.**

Luling (contract)	1.20
Mirando (Webb, Jim Hogg and Zapata Counties	1.15
Rockdale-Minerva (Milam County)	1.25
Thrall	1.00
Callihan (Live Oak and McMullen Counties)	1.65
§Lockhart (Lytton Springs)	....
§Somerset	....

*Texpata Pipeline Co. also posts in Mirando Field paying same prices as Magnolia Petroleum Co.

§Lockhart and Somerset prices same as for North and East Central Texas. Lockhart posted by Magnolia Petroleum Co. and Humble Oil & Refining Co. Somerset is posted by Grayburg Oil Co.

ARKANSAS AND NORTH LOUISIANA

Standard Oil Co. of Louisiana

Caddo below 32°	1.85
32° to 34.9°	2.00
35° to 37.9°	2.10
38° and above	2.20
Homer below 31°	1.60
31° to 32.9°	1.75
33° to 34.9°	1.85
35° and above	1.95
Haynesville below 33°	1.75
33° and above	1.85
El Dorado below 33°	1.75
33° and above	1.85
Bull Bayou, 32° to 34.9°	1.70
35° to 37.9°	1.85
38° and above	2.00
Cotton Valley	1.10
DeSoto	2.05
Crichton	1.85
Bellevue	1.50
Smackover, below 24°	1.00
24° to 24.9°	1.25
25° to 25.9°	1.30
26° to 26.9°	1.35
27° and above	1.40
*Stephens, Ark., below 26°	1.30
26° and above	1.50
**Calion (East El Dorado)	.95
§Urania	1.40

Other companies posting in these fields are: Gulf Pipe Line Co.; Atlantic Oil Producing Co. in Homer, Haynesville and Smackover; The Texas Co. in Caddo, Bull Bayou, DeSoto, Crichton and Smackover.

*Posted by the Atlantic Oil Producing Co.
**Posted by the Gulf Pipe Line Co.
§Posted by the Louisiana Oil Refinning Corp.

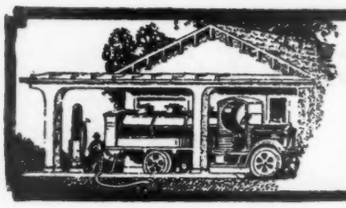
ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.

Rock Creek (Wyo.)	2.00
Salt Creek:	
29° to 29.9°	1.48
30° to 30.9°	1.56
31° to 31.9°	1.64
32° to 32.9°	1.72
33° to 33.9°	1.80
34° to 34.9°	1.88
35° to 35.9°	1.96
36° to 36.9°	2.04
37° and above	2.12
Big Muddy	2.00
Mule Creek	1.50
Grass Creek, light	2.15
Grass Creek, heavy	.90
Elk Basin	2.15
Lance Creek	2.15
Osage	2.15
Lost Soldier (contract)	1.10
Greybull-Torchlight	1.90
Hamilton Dome	1.35
Cat Creek (Mont.)	2.15
Sunburst (Mont.)	1.15
Florence (Colo.)	1.35
Hogback (N. M.)	2.20
Artesia	1.70

Note: Salt Creek, Osage, Cat Creek and Hogback posted by Midwest Refining Co., and the remainder by the Ohio

(Continued on Page 136)



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns, Mar. 23.

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Chicago Dist.—				
†Less than 100 gals.	17.0	19.0	...	12.0
Decatur, Ill.	17.2	19.2	...	12.5
East St. Louis	16.1	18.35	...	11.6
Joliet	17.4	19.4	...	12.7
Peoria	17.2	19.2	...	12.7
Quincy	17.2	19.2	...	12.3
Davenport, Ia.	19.5	21.5	2.0	12.9
Des Moines	19.5	21.5	2.0	12.9
Keokuk	19.5	21.5	2.0	12.9
Sioux City	19.0	21.0	2.0	21.5
Duluth, Minn.	20.5	22.5	2.0	13.6
Minneapolis	20.2	22.2	2.0	13.6
La Crosse, Wis.	20.2	22.2	2.0	13.1
Milwaukee	19.1	21.1	2.0	12.3
Madison	19.3	21.3	2.0	12.5
Detroit, Mich.	19.8	21.8	2.0	13.2
Grand Rapids	19.7	21.7	2.0	13.1
Saginaw	11.9	21.9	2.0	13.3
Evansville, Ind.	20.0	22.0	3.0	12.5
Fort Wayne	20.4	22.4	3.0	12.9
Indianapolis	20.2	22.2	3.0	12.7
South Bend	20.4	22.4	3.0	12.9
Fargo, N. D.	20.9	22.9	1.0	15.6
Huron, S. D.	19.0	21.0	3.0	14.1
Sioux Falls	19.0	21.0	3.0	13.6
*K. C. Mo.	19.9	21.9	3.0	11.3
*Springfield	19.8	21.8	3.0	12.2
*St. Louis	18.6	20.9	2.5	12.0
*St. Joseph	19.0	21.0	2.5	11.9
Wichita, Kan.	18.3	20.3	2.0	11.8
Bartlesville, Ok.	17.4	19.4	3.0	10.9

*State tax is 2c. Remainder is city tax.
†Quantity price on more than 100 gallons, 16.0.

The following monthly rebate system is effective on tank wagon schedules throughout the territory of Standard Oil Co. of Indiana: Over 750 gallons, ½c; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 6,000 gallons, 1¼ cents; over 10,000 gallons, 2 cents. If quantity bought during the year is equal to 12 times the monthly agreed purchases the discount will be paid or credited on the entire quantity less monthly payments. Service station customers will receive discount of 1 cent a gallon on purchases amounting to 200 gallons a month or 2,400 gallons a year; and 2 cents a gallon on 600 gallons a month or 7,200 gallons a year.

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Atlantic City	16.0	....	...	15.0
Newark, N. J.	16.0	18.0	...	15.0
Annapolis, Md.	18.0	....	2.0	15.0
Baltimore	18.0	21.0	2.0	15.0
Cumberland	18.0	21.0	2.0	15.0
Washington	18.0	21.0	2.0	15.0
Danville, Va.	21.5	....	4.5	15.0
Norfolk	21.5	24.5	4.5	15.0
Petersburg	21.5	....	4.5	15.0
Richmond	21.5	24.5	4.5	15.0
Roanoke	21.5	24.5	4.5	15.0
Charleston W. Va.	20.0	23.0	3.5	15.0
Keyser	20.0	....	3.5	15.0
Parkersburg	20.0	23.0	3.5	15.0
Wheeling	20.0	23.0	3.5	15.0
Charlotte, N. C.	21.0	24.0	4.0	15.0
Hickory	21.0	....	4.0	15.0
Mt. Airy	21.0	....	4.0	15.0
Salisbury	21.0	....	4.0	15.0
Charleston, S.C.	22.0	25.0	5.0	15.0
Columbia	22.0	25.0	5.0	15.0

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Atlanta, Ga.	23.0	26.0	3.5	17.0
Augusta	23.0	26.0	3.5	17.0
Macon	23.0	26.0	3.5	17.0
Savannah	20.0	23.0	3.5	15.0
Birm'gham, Ala.	19.0	23.0	2.0	16.5
Mobile	19.0	22.0	2.0	15.0
*Montgomery	21.0	24.0	3.0	17.5
Clarksdale, Miss	20.0	23.0	3.0	14.5
Jackson	20.0	23.0	3.0	13.5
Natchez	19.5	22.5	3.0	14.0
Vicksburg	19.5	22.5	3.0	14.0
Jack'ville, Fla.	21.0	24.0	4.0	15.0
Miami	23.0	26.0	4.0	16.5
Pensacola	21.0	24.0	4.0	15.5
Tampa	21.0	24.0	4.0	15.0
Covington	23.0	26.0	5.0	16.0
Louisville	23.0	26.0	5.0	15.0
Lexington, Ky.	22.0	25.0	5.0	16.0

*In addition to the state tax of 2 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and ½ cent on kerosene.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
*Pittsburgh, Pa.	17.0	22.0	...	16.0
*Philadelphia	17.0	22.0	...	16.0
*Scranton	17.0	22.0	...	16.0
*Allentown	17.0	22.0	...	16.0
Altoona	17.0	22.0	...	16.0
*Erie	17.0	22.0	...	16.0
Dover, Del.	19.0	22.0	2.0	16.0
Wilmington	19.0	22.0	2.0	16.0
Spring'fd, Mass.	18.0	20.0	...	16.0
Worcester	18.0	20.0	...	16.0
Boston	18.0	21.0	...	16.0
Providence, R.I.	19.0	22.0	1.0	16.0
Hartford, Conn.	20.0	23.0	2.0	15.0
New Haven	20.0	23.0	2.0	16.0

*Pennsylvania tax of 2 cents is collected by the dealer and paid by him direct to the State.

SOUTHWESTERN DISTRICT

***Magnolia Petroleum Co.**

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Dallas, Tex.	16.0	19.0	1.0	12.0
Fort Worth	16.0	19.0	1.0	11.0
Houston	16.0	19.0	1.0	12.0
San Antonio	15.0	16.0	1.0	11.0
El Paso	18.0	19.0	1.0	13.0
Texarkana	17.5	20.5	1.0	13.0
Muskogee, Ok.	17.0	20.0	3.0	10.0
Oklahoma City	17.0	20.0	3.0	12.0
Tulsa	17.0	20.0	3.0	12.0
Little Rock	18.5	21.5	4.0	14.5
Ft. Smith, Ark.	18.5	21.5	4.0	14.5

*The following is the schedule of discounts on gasoline adopted by the Magnolia Petroleum Co. in Texas sales and the discounts are graded according to gallonage: Over 750 gallons a month, ⅛ cent; over 2,000 gallons, ¾ cent; over 3,000 gallons, 1 cent; over 4,500 gallons, 1¼ cents; over 6,000 gallons, 1½ cents; over 8,000 gallons, 1¾ cents; over 10,000 gallons, 2 cents. If the quantity bought during the year is 12 times the monthly agreed purchases, the discount will be paid or credited on the entire quantity for the year less any monthly purchases.

The schedule on service station deliveries is: Over 200 gallons a month, 1 cent; over 300 gallons a month, 1½ cents; over 400 gallons, 1½ cents; over 500 gallons, 1¾ cents; over 600 gallons, 2 cents. The same rule applies for annual purchases as in the tank wagon discounts.

OHIO

Standard Oil Co. (Ohio)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
All Ohio points	21.0	23.0	2.0	14.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Denver, Colo.	20.0	20.0	2.0	15.5
Pueblo	19.0	19.5	2.0	15.5
Casper, Wyo.	20.5	22.5	2.5	14.0
Cheyenne	21.5	23.5	2.5	15.5
Butte, Mont.	22.0	22.0	3.0	17.0
Helena	24.0	26.0	3.0	18.0
Salt Lake, Utah	25.0	27.0	3.5	18.0
Boise, Idaho	26.0	28.0	3.0	20.0
Albuquerque, N. Mex.	24.5	27.5	3.0	17.5

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Albany, N. Y.	18.0	....	...	16.0
*New York	18.0	....	...	16.0
Buffalo	16.0	....	...	16.0
Rochester	16.0	....	...	16.0
Syracuse	17.0	....	...	16.0
Boston, Mass.	18.0	....	...	....
Providence, R.I.	19.0	....	1.0	....
Augusta, Me.	21.0	....	3.0	16.0
Manchester, N. H.	20.0	....	2.0	16.0
Burlington, Vt.	20.0	....	2.0	16.0

*Price in steel barrels.
Note: Standard Oil Co. of New York does not generally quote service station price in its territory. In most cases the service station price is 2 or 3 cents higher than tank wagon price.

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
San Francisco	18.0	22.0	2.0	15.5
Los Angeles	16.5	20.5	2.0	15.5
Fresno	18.5	22.5	2.0	17.5
Reno, Nev.	23.5	27.5	4.0	19.0
Portland, Ore.	19.0	23.0	3.0	16.5
Seattle, Wash.	18.0	22.0	2.0	16.5
Spokane	22.0	26.0	2.0	20.5
Tacoma	18.0	22.0	2.0	16.5
Phoenix, Ariz.	25.0	28.0	3.0	21.5

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
Omaha	18.25	20.25	2.0	12.5
Crawford	20.0	....	2.0	13.25
McCook	20.75	22.75	2.0	14.0
Norfolk	19.75	21.75	2.0	13.0
North Platte	20.75	22.75	2.0	13.75
Scottsbluff	20.25	22.25	2.0	13.25

CALIFORNIA
***Standard Oil Co.-Union Oil Co.**

Gravity—	Long Beach Huntington Beach Richfield Brea-Olinda Rosecrans Bom'guez Torrance Inglewood	Whittier La Habra Montebello	Kern River Newhall-McKittrick Midway-Sunset Elk Hills Lost Hills Belridge	Coyote	Santa Fe Springs	Coalinga	Wheeler Ridge	Santa Maria Ventura Salt Lake
14°	.85	.85	.75	.85	....	.75	.75	.85
15°	.87	.85	.75	.85	....	.76	.76	.85
16°	.90	.86	.75	.85	....	.75	.75	.85
17°	.94	.85	.75	.85	....	.75	.75	.85
18°	.98	.86	.75	.86	....	.75	.75	.85
19°	1.04	.87	.75	.87	....	.75	.75	.85
20°	1.10	.89	.82	.90	.89	.79	.78	.90
21°	1.16	.91	.90	.92	.91	.86	.81	.97
22°	1.22	.94	1.00	1.06	.94	.93	.85	1.04
23°	1.28	.97	1.11	1.14	.97	1.00	.89	1.11
24°	1.34	1.01	1.22	1.22	1.03	1.07	.93	1.18
25°	1.40	1.05	1.33	1.30	1.08	1.14	.97	1.25
26°	1.46	1.09	1.44	1.38	1.16	1.21	1.01	1.32
27°	1.52	1.13	1.55	1.46	1.24	1.28	1.05	1.39
28°	1.58	1.17	1.66	1.54	1.32	1.35	....	1.46
29°	1.64	1.21	1.77	1.62	1.40	1.42	....	1.53
30°	1.70	1.25	1.88	1.70	1.48	1.49	....	1.60
31°	1.76	....	1.99	....	1.60	1.56	....	1.67
32°	1.84	....	2.10	....	1.72	1.63	....	1.73
33°	1.92	....	2.21	....	1.84	1.70	....	1.79
34°	2.00	....	2.32	....	1.96	1.77	....	1.85
35°	2.08	....	....	....	2.08	1.84	....	1.92
36°	2.16	....	....	....	2.16	....	....	....
37°	2.24	....	....	....	2.24	....	....	....
38°	2.34	....	....	....	2.34	....	....	....
39°	2.44	....	....	....	2.44	....	....	....
40°	2.54	....	....	....	....	....	....	....
41°	2.64	....	....	....	....	....	....	....
42°	2.74	....	....	....	....	....	....	....

*Column 2—Long Beach and Huntington Beach crudes, 14 to 32 degrees, inclusive; Richfield and Brea-Olinda, 14 to 30 degrees; Torrance and Inglewood, 14 to 28; Domingues, 24 to 42 degrees. Rosecrans crude ranges from 14 to 42 degrees, but only Union Oil Co. posts below 24 degrees.
Column 3—Whittier and La Habra crudes, 14 to 32 degrees; Montebello, 14 to 30 degrees.
Column 4—Kern River, Newhall and McKittrick, 14 to 19 degrees; Midway-Sunset and Elk Hills, 14 to 33 degrees; Lost Hills and Belridge, 14 to 34 degrees.
Column 6—Santa Fe Springs. Only Union Oil Co. posts below 24 degrees.
Column 9—Salt Lake, 14 to 19 degrees, inclusive; Santa Maria, 14 to 30 degrees; Ventura, 14 to 35 degrees. Posted only by Union Oil Co.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline: Tank wagon	Gasoline: Service station	Gasoline: Inclds tax of	Kero. Tank wagon
*New Orleans	17.0	20.0	3.0	13.5
Alexandria	16.5	19.5	3.0	14.5
Baton Rouge	15.5	18.5	3.0	13.0
LaFayette	17.5	19.5	3.0	14.0
Lake Charles	17.0	20.0	3.0	14.5
Shreveport, La.	15.5	18.5	3.0	13.5
Memphis, Tenn.	18.0	21.0	3.0	14.5
Chattanooga	18.5	21.5	3.0	15.0
Knoxville	19.0	22.0	3.0	16.5
Nashville	18.5	21.5	3.0	15.0
Bristol	19.5	22.5	3.0	15.0
Little Rock, Ark	18.5	21.5	4.0	14.5

*Tax of 3 cents includes city tax of 1 cent.

CRUDE PRICE CHANGES

March 15.—Magnolia Petroleum Co. posted schedule for Texas Panhandle crude. Gravities and prices are the same as those posted by the Kay County Gas Co.

March 19.—Indian Refining Co. added new grade, "39 and above," for western Kentucky crude, posting a price of $2.15. Previously the highest grade was 36 and above, posted at $2.05.

TANK WAGON PRICE CHANGES

March 11.—Magnolia Petroleum Co. reduced tank wagon and service station prices of 1 cent at Tulsa.

March 18.—Magnolia Petroleum Co. reduced tank wagon and service station prices of gasoline 2 cents at Muskogee, Okla.

ORGANIZE MARCH OIL CO.

OKMULGEE, Okla., Mar. 20.—The March Oil Co. has been organized here with a capital stock of $1,000,000, with J. J. Deaner, president; W. E. Clark, vice president, and F. J. Reames, secretary and treasurer. Principal stockholders are J. J. Deaner, R. T. Potter, W. E. Clark and F. J. Resmes. All named were former officials of the Windsor Oil Co., which was recently sold to the Champlin Oil & Refining Co. The March Co. expects to deal exclusively in Okmulgee district properties.

CRUDE OIL PRICE

(Continued from Page 135)

Oil Co. Both companies post Grass Creek light and Elk Basin.

EASTERN STATES

Joseph Seep Purchasing Agency

Penna Grade Oil in New York Transit Lines (New York)	3.90
Bradford District Oil in National Transit Lines (Pennsylvania)	3.90
Penna Grade Oil in National Transit Lines (Pennsylvania)	3.80
Penna Grade Oil in Southwest Pa. Pipe Lines (Pennsylvania)	3.80
Penna Grade Oil in Eureka Pipe Line Lines (West Virginia)	3.75
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	3.65
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia)	2.20
Corning Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.35
Somerset Medium Oil in Cumberland Pipe Line Lines (Kentucky)	2.30
Somerset Light Oil in Cumberland Pipe Line Lines (Kentucky)	2.45
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky)	1.15
Gaines (Pennsylvania)	2.95
Keister (Pennsylvania)	2.45

MIDDLE WESTERN STATES

Ohio Oil Co.

Lima	2.23
Wooster	2.25
Illinois	2.12
Indiana	2.00
Princeton	2.12
Plymouth	1.65
Waterloo	1.10
*Western Kentucky, 32.9° and below	1.85
33° to 35.9°	1.95
36° to 38.9°	2.05
39° and above	2.15
**Cumberland, Barren and Monroe Counties	2.45
†Oil Springs (Canada)	2.70
†Petrolia (Canada)	2.63

*Posted by Indian Refining Co.
**Posted by Paragon Development Co.
†Posted by Imperial Oil Co., Ltd.

MEXICAN

*Tuxpam light (f.o.b. Mex. ports)	$1.35
§Panuco heavy (f.o.b. Mex. Ports)	1.15
Tuxpam (New York)	2.05
Panuco (New York)	1.70

*Plus 30.33c tax. § 16.93c tax.

WAR on WASTE!

THE SINCLAIR LAW OF LUBRICATION

for every machine
of every degree of
wear
there is a scientific
Sinclair Oil
to suit its speed
and seal its power

SINCLAIR OILS
REG U.S. PAT. OFF.

A POWERFUL weapon in Sinclair's "War on Waste" is the Sinclair Law of Lubrication. This law tells the motorist that his engine has a "*degree of wear*" which requires just the right grade of oil "to suit its speed and seal its power". And he should change the lubricating oil in his car to fit its changing "degree of wear".

In following this Law of Lubrication, Sinclair dealers are rendering a real service to motorists. There is a science behind it—there's a real service behind it. There is a "War on Waste" behind it—a war on inefficient and destructive operation of machinery. Sinclair Opaline Motor Oil increases the efficiency and prolongs the life of the engine! It helps the motorist maintain economical transportation.

Why not increase your gallonage, by using this common-sense method of motor-oil recommendation?

SINCLAIR REFINING CO.
45 Nassau Street, New York

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Merger Talk Dominates Oil Securities

Union Oil of California Reaches New High Point. General Petroleum Strong and New Jersey Common Active

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, 30 Church St., New York

NEW YORK, Mar. 22.—Merger talk continued to dominate oil securities during the past week. Union Oil of California was the feature, being heavily bought and advancing to a new high price. Another strong feature was General Petroleum. Standard of New Jersey common was active and strong on expectations of favorable earnings report for 1925.

Standard of New York

Acquisition of General Petroleum by Standard of New York will make the latter company a national organization. The natural boundary between the territory east of the Rockies and west is done away with. The New York organization will produce, refine and market oil from coast to coast, with Standard of New York in the East, Magnolia Petroleum in the Mid-Continent and Gulf Coast, and General Petroleum in California.

This merger, more than any other yet announced, should help stabilize the oil business. It will help equalize prices and production in the various major producing and marketing districts of the United States.

Control of production and refining capacity on the Pacific Coast will help the Standard Oil Co. of New York serve its customers in the Far East. For years the New York company has purchased California oil products—largely kerosene—to market in China and Japan and other Far Eastern markets.

Mergers

Recent mergers in the oil business all seem to be of a constructive character. It should not be long before their effect is felt in the operating end of the industry.

Gulf Oil Corp.

The annual report of the Gulf Oil Corp. for 1925 shows record-breaking gross and net earnings. Gross revenue last year aggregated $215,661,867 and the net income available for dividends after increased charges for depreciation and depletion amounted to $35,000,760. The consolidated income account for 1925 compares as follows:

	1925	1924
Gross earnings	$215,661,867	$172,481,560
Operating exp.	127,763,121	108,099,026
Op. profit	$87,898,746	$64,382,534
Other inc.	*5,106,433	*4,373,233
Total inc.	$93,005,179	$68,755,767
Interest, taxes, etc.	21,044,702	17,074,432
Depr., depl. etc.	36,959,716	32,514,540
Net income	$35,000,761	$19,166,795
Dividends	6,554,732	6,523,230
Surplus	$28,446,029	$12,643,565

*Includes $2,948,543 appreciation in values of inventories in 1925 and $1,873,820 in 1924.

Consolidated balance sheet of Gulf Oil Corp. and subsidiaries as of December 31, 1925, compares as follows:

Assets

	1925	1924
Plant	$319,526,251	$286,342,299
Cash	11,956,962	7,244,054
Mark. sec.	1,036,548	6,166,719
Reacq. sec.	602,386	2,556,325
Other invest.	980,827	472,661
Notes and accts. rec.	13,464,406	10,482,256
Inventories	66,919,679	53,088,156
Emp. loans	9,174,112	9,639,987
Def. charges	3,949,122	3,540,652
Total	$427,610,293	$379,533,409

Liabilities

Capital stock	$109,767,900	$108,952,900
Fund. debt.	42,904,000	49,039,500
Accts. pay.	10,762,725	10,255,842
Accrd. liab.	1,861,214	1,386,669
Depr. and depl. res.	148,595,421	127,567,979
Tax res., etc.	5,509,385	3,594,158
Def. cred.	244,534	633,252
Min. int. in subs.	5,665	9,169
Surplus	107,961,449	78,093,940
Total	$427,610,293	$379,533,409

At the Gulf Oil Corp. annual meeting at Pittsburgh the retiring directors were re-elected.

W. L. Mellon on Outlook

W. L. Mellon, president of the company, in his report to stockholders said:

"There has been a decline in the oil production of the country which is tending for higher crude prices, but, on the other hand, there has been a general increase in establishing various processes at refineries for increased production of gasoline which will likely have the effect of stabilizing the market price of that product, even though the price of crude oil may advance to higher levels."

Regarding conditions in Venezuela, Mr. Mellon says the company has a daily production of its lake shore consessions running from 15,000 to 25,000 bbls. daily. He also pointed out that the new addition to the company's plant at Bayonne, capable of handling 20,000 bbls. of crude oil daily, will be ready for operation April 1. This plant was constructed to take care of the Venezuela crude, so it can be moved direct to the northern markets.

The report of the Standard Oil Co. of Kentucky for the year ended December 31, 1925, shows a net profit of $7,188,490 after Federal taxes, equivalent to $10.61 a share (par $25) earned on outstanding $16,929,809 capital stock. This compares with $5,382,940 or $7.98 a share on $16,864,434 stock in 1924.

At the annual meeting, directors and officers were re-elected.

The Yeager Oil Corp., an Oklahoma concern, paid a cash dividend of $2 a share on March 20, payable to stockholders of record March 15.

British-American Oil Co. of Toronto has declared a dividend of 62½ cents, payable April 1 to shareholders of record March 17; and share warrant coupons are payable April 1.

Pennok Oil

Pennok Oil Corp. reports for the year ended December 31, 1025, net profit of $555,898 after depreciation, depletion, Federal taxes, etc., equivalent to $3.70 a share earned on the outstanding 150,000 shares of no par value stock.

Prairie Pipe Line

The Prairie Pipe Line Co. for the year ended December 31, 1925, reports net income of $15,228,608 after charges and taxes, equivalent to 18.80 a share earned on $81,000,000 capital stock. This compares with $11,794,547 or $14.56 a share, in 1924.

The income account for 1925 compares with 1924 as follows:

	1925	1924
Net income	$15,228,607	$11,794,547
Dividends	6,480,000	6,480,000
Surplus	$8,748,607	$5,314,547

The balance sheet of the Prairie Pipe Line Co. as of December 31, 1925, follows:

Assets

Property	$ 87,610,997
Stock in affiliated companies	3,064,000
Cash, accts. rec., etc.	43,644,896
Materials and supplies	1,845,294
Deferred assets	104,181
Unadjusted debits	592,468
	$136,861,836

Liabilities

Capital stock	$ 81,000,000
Current liabilities	1,998,946
Unadjusted credits*	29,890,987
Surplus	23,971,903
	$136,861,836

*Includes reserve for depreciation, taxes, etc.

Simms Petroleum

The report of the Simms Petroleum Co. for the year ended December 31, 1925, shows net income of $2,636,736 after interest, taxes, depreciation and depletion, equivalent to $3.85 a share (par $10) earned on 684,492 shares of capital stock. This compares with $1,922,217 or $2.81 a share on 683,251 shares in 1924.

The Standard Oil Co. of Kansas reports for the year ended December 31, 1925, net profit of $494,296 after depreciation and taxes, equivalent to $1.54 a share (par $25) earned on outstanding $8,000,000 stock. This compares with a net loss of $480,742 in 1924.

Report of Tide Water Oil Co. for the year ended December 31, 1925, shows net income of $5,987,253, after depreciation, depletion, Federal taxes, etc., equivalent, after preferred dividends, to $2.81 a share earned on 2,018,231 shares of no-par common stock. This compares with $3,898,413, or $7.79 a share, on 500,045 shares of $100 par stock outstanding in 1924.

Consolidated income account for 1925 compares as follows:

	1925	1924
Gross earnings	$79,502,708	$66,256,621
Oper. exp.	67,606,609	57,207,396
Opr. inc.	$11,896,099	$ 9,049,225
Other inc.	733,184	697,891
Total inc.	$12,629,283	$ 9,747,116
Dep. and dep.	5,785,655	5,358,923
Fed. tax.	889,672	548,524
Net inc.	$ 5,953,956	$ 3,839,669
Outside stockholders prop. (cr.)	33,279	58,744
T. W. O. prop. inc.	$ 5,987,253	$ 3,898,413
Pfd. divs.	299,732	
Com. divs.	2,017,844	2,000,145
Surplus	$ 2,669,677	$ 1,898,268

Consolidated general balance sheet of Tide Water Oil Co. and subsidiaries, as of December 31, 1925, compares as follows:

Assets

	1925	1924
*Prop. eq. etc.	$60,757,674	$61,321,028
Oth. invest	1,127,146	1,009,753
Inv. affil. cos.	6,403,229	6,236,595
Inv. res. fund	1,923,578	347,400
Cash	7,518,523	2,031,907
Securities	9,070,042	
Accts. & notes rec.	5,829,843	4,331,271
Cr. oil & pr.	15,111,779	16,196,056
Due fr. affl. cos.	67,233	154,422
Mat. & sup.	1,729,126	1,639,634
Sub. to pfd. stk	24,150	
Def. chgs	1,906,739	1,364,304
Total	$111,469,062	$94,432,370

Liabilities

	1925	1924
Pfd. stock	$25,042,000	
Co. stock	†50,461,687	$50,004,500
Gold bonds		12,000,000
Min. int in subs.	92,193	566,327
Fur. money obl.	313,737	1,119,196
Accts pay	4,227,598	3,781,924
Due affil cos.	107,097	213,849
Band loans		
Accrd. tax.	1,047,969	779,643
Cap. stk subs	501,672	431,371
Def. liab	1,563,944	1,104,962
Res for cont	4,503,583	3,914,001
Surplus	23,607,582	20,516,597
Total	$111,469,062	$94,432,370

*After depreciation and depletion. †Represented by 2,018,231 no par shares.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE PRICES

Stocks—	Par	Close. Quot.— Mar. 22	Mar. 15	1926 High	1926 Low	1925 High	1925 Low	1924 High	1924 Low
American Republics	..	*65	*63	73	63	79¾	48	48	25
Associated Oil	25	59	58½	59⅛	44⅜	47⅛	32	34⅝	27⅝
Atlantic Ref., com.	100	100	100	110	102	117½	95⅛	140½	78½
Barnsdall "A"	25	29	27⅛	33½	26½	33⅛	18⅝	29⅛	14
California Pet., com.	25	35⅛	34½	38⅛	30⅝	34⅜	23⅝	29	19⅞
General Petroleum	25	60	62⅛	63⅛	51⅛	59	42	45	38⅝
Houston Oil	100	62⅛	*64	72	64	85	59	82⅛	61
Independent Oil & Gas	..	25⅝	28⅝	34	24½	41⅝	13½	16¾	5⅝
Indian Refining	10	11	11⅝	13⅜	9⅛	14¼	5½	7	8⅜
Louisiana Oil	10	14⅞	15	19⅛	16	23⅜	13⅝	..	..
Maracaibo	..	25⅛	26⅛	28⅞	24	35⅛	20⅜	37⅛	25⅜
Marland	..	55⅛	56	60¼	55	60⅛	32⅝	42	29
Mexican Seaboard	..	8⅛	8⅝	12⅛	6	22⅛	9	25⅜	14⅛
Mid-Continent Pet.	..	31⅜	31⅝	41	31	38	25⅝	40¼	22⅝
National Supply	50	62⅝	63⅛	61¼	55½	71	54⅝	72½	54
Oil Well Supply	25	33¼	*33	36	31	38	33⅝	..	..
Pacific Oil	..	55⅞	55½	83⅛	74¼	78½	51⅛	58¼	45
Pan. Amer. P. & T., com.	50	67⅝	64⅝	76⅞	61½	83⅞	59⅛	65	44½
Pan. Amer., Western B.	..	39⅝	39⅞	46	34	49⅜	37⅛	..	..
Phillips Pet.	..	45	44⅝	49⅛	42⅜	17⅛	36⅛	42⅛	28½
Producers & Refiners	50	14½	14	17½	14¼	32⅝	12⅛	43½	29⅜
Pure Oil, com.	..	27½	36½	31	27½	33⅜	25⅛	30½	20
Royal Dutch, N. Y., sh.	13.40	52½	51⅝	57⅝	51⅜	57⅝	48¼	59⅜	40⅜
Shell Transport	10	43⅜	*44⅛	48	44	49	39⅝	42	33
Shell Union, com.	..	25⅝	26⅝	28⅛	25⅛	28⅜	21⅝	22⅛	15⅜
Simms Pet.	10	23¼	22⅝	28⅝	23⅜	28½	17⅝	24	10⅜
Sinclair Consolidated, com.	..	23	22⅛	24⅛	20½	24⅝	17	17⅛	15
Skelly Oil	25	30	29	32⅞	29½	32½	21⅜	29	17⅛
Standard of California	25	56⅛	56⅛	62¼	55⅛	67¼	51⅛	68⅛	55½
Standard of New Jersey, com.	25	44	41⅛	46⅜	41⅞	47⅛	38⅝	41⅜	33
Sun Oil Co.	..	*34⅛	35⅛	41⅝	36⅛	43⅞	38⅛	..	..
The Texas Company	25	50⅞	51	54⅝	50⅜	55	42⅜	45⅝	37⅜
Texas Pacific Coal & Oil	10	15	14½	19⅛	14	23⅜	11	15⅛	8¼
Tide Water Oil (new)	..	35	34⅝	39¼	39¼ ‡152	122	151	116¼	
Transcontinental	..	3⅝	3⅜	4⅝	3⅜	5⅞	3½	6¼	3⅜
Union Oil of California	25	47⅛	42½	47⅞	37¼	43⅜	33⅛	39	35½
Union Tank, com.	100	*90	88	94	85	‡134	118	132⅞	94
White Eagle Oil & Ref.	..	27⅜	27⅞	29⅝	26¼	31⅝	25⅝	29⅝	23¼
Standard Oils									
Anglo-American Oil	£1	*18¼	17⅝	19⅜	17⅜	26⅝	17½	18⅜	14⅜
Borne Scrymser	100	*240	*245	248	226	240	205	264	150
Buckeye Pipe Line	50	56⅝	*55	59½	55⅝	72	53½	85½	51
Chesebrough Mfg. Co.	25	*66	*68¼	72⅝	63	74	48¼	52½	29¼
Continental	10	21⅜	22	25⅞	21⅜	31½	21⅜	..	..
Crescent Pipe Line	25	*14½	*14½	16	15⅛	17½	10	..	11⅜
Cumberland Pipe Line	100	124	*125	137	120	156	128	148	108
Eureka Pipe Line	100	*58	*58	63⅜	60	96	61¼	105	74
Galena Signal, com.	100	*25⅝	*26	32½	27	68½	23½	69⅜	52½
Humble Oil & Refining Co.	25	†62	86	99⅝	85	99	42½	43⅜	36
Illinois Pipe Line	100	*140	*142	142	134½	154½	124	161	123
Imperial Oil (Ltd.)	..	34⅝	34⅜	38⅝	34½	39¼	27¼	119	99
Indiana Pipe Line	50	*67	*69	67	58	84	57⅛	100	66
International Pet. Co.	10	31⅞	31½	35¼	32	35⅝	22⅛	24⅜	16⅞
National Transit Co.	12.50	17⅝	17⅜	20⅝	18	25⅛	16½	26⅝	20⅝
New York Transit	100	*49	*50	50	39	79	50	97	54½
Northern Pipe Line	100	*74	77½	80½	70⅝	88	67½	107⅜	72
Ohio Oil Co.	25	83¼	*83⅜	87⅝	76¼	75⅛	68	79½	53
Penn.-Mex. Fuel	25	*17	*17½	23	16¾	44	19	35⅝	27
Prairie Oil & Gas	25	55	56⅛	60¼	55	65½	45⅝	269	193
Prairie Pipe Line	100	*125½	125½	127	123¼	129⅝	105	111	100
Solar Refining Co.	100	194	199	212	197	259	200	240	170
South Penn Oil	25	*40	*40	50	44½	‡197	139	176	117
Southwest Pa. Line	100	*54	55½	54½	47½	84	50	89	68
Southern Pipe Line	100	*71½	*72	74½	61½	103	63	100	80½
Standard of Indiana	10	64⅜	64½	70⅛	64	70⅜	59½	69⅝	54¼
Standard of Kansas	25	29⅜	31	36⅝	31	46	30¼	50½	32½
Standard of Kentucky	25	121½	*122	134⅝	125⅛	137	114⅝	121⅞	101
Standard of Nebraska	100	240	232	254	239½	270	231	262	198
Standard of New York	25	31½	33⅞	37⅝	33½	48⅝	40	48	37⅝
Standard of Ohio, com.	100	*320	331	362	336	369	338	337½	277
Swan & Finch, com.	25	19	*18½	21	20	27	12	28	20
Vacuum Oil	25	100⅝	101½	109⅜	98½	109½	80½	83½	80½
Miscellaneous									
Gulf Oil Corp. of Pa.	25	85⅞	84⅝	93⅜	84⅜	98¼	63½	67⅝	56

*Bid, no sales. ‡Old stock. †Exrights.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange was as follows:

Mar. 22	57.96	Feb. 15	57.51	Jan. 11	57.55
Mar. 15	56.34	Feb. 8	58.96	Jan. 4	59.15
Mar. 8	55.02	Feb. 1	58.51	Dec. 28	59.40
Mar. 1	55.84	Jan. 25	57.96	Dec. 21	56.86
Feb. 20	58.23	Jan. 18	57.38	Dec. 14	56.89

TWENTY-FIVE PAPERS PRESENTED AT MEETING

(Continued from Page 132)

were studied, namely, a residuum, a gas oil, and a gas oil from Dubbs residuum, thus affording a comparison of the rate of decomposition of oils of the three most important types. Also, the heat-sign of the cracking process as a whole was investigated.

"Properties of Gasoline Hydrocarbons From Tonkawa Crude Oil," by N. A. Stephens.

1. The gasoline hydrocarbons from Tonkawa crude oil represent mostly the following compounds:

Group C_5H_{12}	5.03%
C_6H_{14}	15.16%
C_7H_{14} C_7H_{16}	24.60%
C_8H_{16} C_8H_{18}	15.75%
C_9H_{20}	9.10%
$C_{10}H_{22}$	24.86%
$C_{12}H_{24}$	
$C_{12}H_{26}$	
Extreme cuts	4.50%
	100.00%

2. The higher specific gravity in all fractions of Tonkawa crude oil than for corresponding paraffins and olefines indicates the presence of cyclohydrocarbons.

3. The molecular refractory values indicate that in heptane and octane groups there are present the corresponding olefines.

4. The determination of latent heat, specific volumes, ratio between vapor and liquid phases, etc., on the basis of molecular weight determined by the V. Meyer method, give satisfactory results.

"The Hydrogenation of Cracked Gasoline," by C. C. Wagner. The chemical theory upon which unsaturated gasolines rest leaves room for interesting observation. Some of the results, as for example: Hanus iodine numbers, sulphuric acid absorption and reaction to hydrogen, indicate structures akin to ethylene linkages. The fact that after a gasoline speciment in vapor phase has been passed over finely divided nickel or platinum in presence of hydrogen will lower all the other responses, is conclusive. The idea extant that increased hydrogen content of gasoline will minimize the "piston ring" or fuel knock is quite well advanced. Further, the relation of unsaturation to gasolines going off color with age may find some remedy in the hydrogenized product.

"Bleaching of Commercial Gasoline by Sunlight and Color Reversal During Dark Storage," by Albert H. Vilbrandt and James R. Withrow. Deals with the coloration of commercial gasolines especially of gasolines which have come to our attention within the past year. No attempt was made to go into the chemistry of the material causing this color in gasoline, but it was our aim to search for cause of color and to suggest means of avoiding it. Two distinct classes of colored gasoline were investigated, viz: 1—A gasoline which was colorless upon delivery and when kept in the dark would attain a decided yellow or even a brownish yellow or orange coloration, which color, upon exposure to sunlight, or even daylight, would tend to become colorless. 2—A gasoline which distilled over with a decided yellowish coloration, but said color not being bleached by action of daylight or sunlight. The following is a summary of our findings: (a) A gasoline when exposed to sunlight for two hours decreased in color from a+16 Saybolt to a+21.5 Saybolt and reverted to a+16 Saybolt color when put in semi darkness for 24 hours. (b) A gasoline which when exposed to sunlight for two hours bleached from a+1 Saybolt to a+19 Saybolt color and which reverted to about a+17 Saybolt when put in dark for 48 hours. (c) The effect of heating sample apparently had little bleaching effect as noted by color of residue during distillation. (d) Exposure to diffused daylight also tends to bleach the gasoline as evidenced by the fact that a sample having a coloration of +1 Saybolt was decolorized to a+17 Saybolt color in three days' time, attaining a color of +16 Saybolt at the end of 24 hours, with intervening darkness of about 12 hours.

"Pure Hydrocarbons from Petroleum," by G. G. Brown and A. R. Carr, University of Michigan, Ann Arbor, Mich. Commercial straight run gasoline from the Cabin Creek Field was systematically fractionated in a column, 18 feet high, packed with modified Raschig rings one-half inch in diameter, and in a similar column 10 feet high containing one-fourth-inch rings, and in a glass column five feet high packed with one-eighth-inch rings. Five fractionations were sufficient to separate cyclo-pentane, cyclohexane, benzene, and toluene from the pentanes and hexanes and gave 200 cc. of isopentane (30.5 degrees to 30.6 degrees Centigrade) and 250 cc. of normal pentane (36.2 degrees to 36.3 degrees Centigrade.) Seven fractionations gave 300 cc. of isohexane (61.1 degrees to 61.2 degrees Centigrade) and 1,000 cc. of normal hexane (68.9 degrees to 69.0 degrees Centigrade. Nine fractionations separated 2,000 cc. of normal heptane (98.6 degrees Centigrade to 98.7 degrees Centigrade. Ten fractionations gave 2,500 cc. of isooctane (117.9 degrees to 118.1 degrees Centigrade), 1,100 cc. of normal octane (124.3 degrees to 124.5 degrees Centigrade and 600 cc. of normal nonane (150.2 to 150.9 degrees Centigrade.) This work with imperfect columns of moderate efficiency indicates that pure hydrocarbons of boiling points up to 150 degrees may be obtained by systematic fractionation at atmospheric pressure.

"The Sharples Process", by Max B. Miller. Discusses the application of the Sharples process to the dewaxing of long residuums and overhead distillates. Increased yields of lubricating oil result, over what is obtained by cold pressing. This amounts to 50 to 100 per cent when applied to that fraction of the crude which is ordinarily cold pressed as a wax distillate. In dewaxing long residuums a residuum representing the entire lub cut may be centrifuged to separate the wax. Or in the case of asphaltic base oils the entire lub cut may be taken overhead and then dewaxed.

"Desulfurizing Effects of Sodium Hypochlorite on Naphtha Solution of Organic Sulfur Compounds," by A. E. Wood, A. R. Greene and R. W. Provine, Mississippi College, Clinton, Miss. A study of the desulfurizing effects of sodium hypochlorite solutions on naphtha solutions of ethyl sulfide, n-butyl sulfide, diphenyl sulfide, ethyl disulfide, n-propyl disulfide, isoamyl disulfide, ethyl mercaptan, n-propyl mercaptan, isoamyl mercaptan, carbon disulfide, hydrogen sulfide and elementary sulfur. The results show that the desulfuring effects are dependent on the sulfur compound, the per cents of free alkalinity and available chlorine present in hypochlorite solution, volume ratio of hypochlorite solution to naphtha solution, and the time and intensity of agitation.

"The Specific Heats of Petroleum Oils," by A. R. Fortsch and Walter G. Whitman. The specific heats of 15 petroleum oils have been determined over temperature intervals varying from 50 to 430 degrees Fahrenheit. The results may be expressed by the equation $C = \frac{(t-670)\ (2.10-Sp.\ Gr.\ 60°}{2030}$

Where C = the specific heat
t = the temperature in degrees Fahrenheit.
Sp. Gr. 60 = the specific gravity of the oil at 60 degrees Fahrenheit.

This equation applies to liquid oils up to their boiling points, and fits the data with an average deviation of less than 2.5 per cent.

Comparisons with the work of other investigations show that the equation represents a good average of published data on specific heats and that it can be applied to normal petroleum oil with a probable accuracy within the limits demanded by engineering problems.

"The Effect of Pressure and Temperature on the Total Volume of Partially Vaporized Mid-Continent Crude," by Robert E. Wilson and H. G. Schnetzler. 1. The amount of vaporization which takes place when oils are heated in a flowing stream is a complicated function of pressure, temperature and the composition of the oil. Although the data is of considerable importance in the design of heat exchangers, pipe stills, cracking coils, etc., the experimental difficulties involved in making a comprehensive study for even a single oil is so great that little if any such data has ever been published.

2. This report describes a simple and reasonable accurate method for making and presenting the results of such determinations, and gives the experimental results obtained, on Mid-Continent crude oil containing varying amounts of water up to about 400 degrees Fahrenheit.

3. Small variations in the water content of the crude were found to have a large affect on the total volume (vapor and liquid) occupied at elevated temperatures. Thus at 300 degrees Fahrenheit and 40-pound pressure dry crude has not expanded over 10 or 15 per cent, while crude containing 1.75 per cent water expands 1,100 per cent. This is, of course, due to the comparatively large expansion which takes place when water vaporizes.

"The Chemistry of Gasoline, With Respect to Color Stability and Gum Formation," by Benjamin T. Brooks. Published information regarding color stability and gum formation in gasoline is very scanty. Discoloration of gasoline is due to a variety of causes, some of which are already known. The present paper, as regards discoloration, shows the pronounced effect of mere traces of acidity which develop in gasolines and kerosenes originally neutral and of good color. This condition has been found even in straight run gasolines which have never been acid treated. Oxidation by air does not cause discoloration of either saturated or cracked hydrocarbons, by themselves, even when the normal oxidation products of the hydrocarbons themselves are added, or have accumulated in the oil to a considerable extent. The chemistry of the development of the acidity which does cause discoloration is explained.

That di-olefins are chiefly responsible for gum formation is commonly believed but never has been proved. The present paper shows that gum formation is a general property of unsaturated hydrocarbons, though at very different rates. Gum formation is a perfectly normal oxidation of unsaturated hydrocarbons, the first step being the formation of peroxides, in fact "Gum", when freshly formed is essentially a mixture of peroxides; ketones, aldehydes and organic acids are also formed, forming the well known fluid mixture known as gum. The formation of peroxides is connected with the oxidation of other substances, including sulfur compounds, so that in this way the oil is first "sweetened", followed by the development of sufficient acidity to form the cloudy appearance often noted, followed by discoloration caused by this acidity.

"The Development of a Liquid Phase Cracking Process," by S. J. M. Auld and A. E. Dunstan. This paper, which deals with the A. D. H. Cracking Process, is devoted to a description of fundamental principles, which were elucidated experimentally, and upon which the design of the plant was based. A discussion is given of the problem of maintaining the liquid phase, and the factors which operate for and against this state are examined; while the actual mechanism of cracking is also the subject of comment. An account is given of some experiments which were carried out to determine the relationship between oil temperature, skin temperature and furnace temperature, so as to design the heating arrangements of the plant to give the desired effect.

"The Aliphatic Tertiary Alcohols and Their Industrial Possibilities," by Harold S. Davis and Wallace J. Murray. Petroleum products can be successfully utilized for the preparation of aliphatic tertiary alcohols.

The tertiary alcohols (tertiary butanol boiling point 82 degrees Centigrade, tertiary amyl alcohol boiling point 101.8 degrees Centigrade, etc.), form a homologous series similar to those of the primary and secondary alcohols but have quite different properties. For instance teritary butanol reacts only slowly with metallic sodium or with bromine at room temperature.

A brief description of the more striking chemical and physical properties of these tertiary alcohols will be given.

"The Separation of the Less Volatile Constituents of Petroleum," by Harold M. Smith, United States Bureau of Mines, Bartlesville, Okla.

A detailed study of the less volatile constituents of petroleum is being made by the Bureau of Mines.

The present paper discusses work now in progress on crude from the Salt Creek, Wyoming Field, and involves the following:

(1) A laboratory method for low temperature continuous "topping" of crude petroleum.

(2) Extraction of the topped oil by means of solvents.

(3) Separation of the solid and liquid constituents from the extraction liquor.

"Photomicrographs of Precipitated Wax," by F. W. Padgett and D. G. Hefley. Projections of the following series will be shown:

(1) Variation of crystal size with viscosity of medium.

(2) Variation of structure with variation of percentage of wax in medium of constant viscosity.

(3) Raw wax distillate, cracked wax distillate, and 50-50 mixture of raw and cracked wax distillate.

(4) Effect of slow cooling on crystal size.

(5) Cold and hot press wax.

(6) Miscellaneous, treated cylinder stock, petrolatum, bright stock containing 70 per cent wax separated from petrolatum, 200 viscosity distillate containing 25 per cent wax from petrolatum, 200 viscosity distillate containing 25 per cent ordinary wax, and 200 viscosity distillate containing 25 per cent ordinary wax and 1 per cent asphaltic matter.

The petrographic microscope is a useful instrument for the study of precipitated wax in oils. The above photographs were taken with the petrographic microscope between crossed nicol prisms.

"The Relation of Fundamental Scientific Research to the Petroleum Industry," by B. T. Brooks. This paper covers needed fundamental scientific research in the petroleum industry, and recounts the steps leading to the recent endowments given by John D. Rockefeller and the Universal Oil Products Co. Anti-detonating compounds, wax centrifuging, alcohols from petroleum, hydrogenation of petroleum, filtration of petroleum, vacuum distillation, lubricating value of various petroleum hydrocarbons, fluorescence in petroleum distillates, cracking reaction, fractionation of petroleum, oxidation of oils, gum formation in petroleum, etc., are discussed.

"A Comparison of Some of the Physical and Chemical Properties of Oils and of Their Efficiencies as Lubricants,"—Preliminary Paper, by M. V. Dover, University of Missouri, Columbia, Mo. The following properties of three mineral oils have been compared:

Iodine number, acid number, flash point, specific gravity, viscosity, surface tension, interfacial tension and efficiency as lubricants. Brief study has also been made of the clogging effect of iron or steel capillaries by two of these oils. This latter was suggested by earlier work by Wilson and Barnard.

PENNSYLVANIA MARKET DULL

OIL CITY, Pa., Mar. 19.—The past week was exceedingly dull in the Pennsylvania refined market with little demand and practically no price changes. Gasoline continued to be weak. Kerosene was still fairly strong. Cylinder stocks were very weak and the market for them seemed to be lacking. There was also little movement of wax. Neutrals were fairly brisk and the prices for these products held their own. There was some demand for fuel oil with prices unchanged.

HEAVY STOCKS FACTOR IN CALIFORNIA'S ADVANCE

(Continued from Page 23)

a market for over 70,000 bbls. a day of "heavy" oil that never reached the refinery as is evidenced by the relatively small increase in crude oil stocks, even to the end of 1923, and the fact that until 1923 California "shipped" practically no crude oil.

For the several years preceding the bringing in of the Los Angeles Basin (light oil) fields practically all of the crude available for refining was heavy crude—and all of it was run except an average of something over 70,000 bbls. a day.

Today, the production is about 265,000 bbls. a day of heavy crude, or about the same as in the earlier years, plus about 335,000 bbls. a day of light oil.

Obviously, then, California's big problem during the last three years has been to take care of her light oil—and to find a market for an enormously expanded refinery output.

In the Oklahoma-Kansas area, in inland Texas and in the Texas Gulf Coast the outstanding tendency in refinery operations has been the increase in the amount of gasoline and a corresponding decrease in the amount of fuel oil and kerosene obtained from the average barrel of crude oil.

That cracking has been a very important factor in this basic change is evidenced by the following tabulation for January, 1926—all amounts in percentages:

Area—	Straight Run	Cracked	Natural Gaso.
Okla.-Kans.	68	27	5
*Texas-La.-Ark.	73	26	6
Gulf Coast	51	42	7
California	90	..	10

*Not including the Gulf Coast.

In the Texas Gulf Coast cracking did not make much headway until 1923 as was shown in the article on page 36 of the March 18 issue of The Oil and Gas Journal.

And while there is a small amount of cracking done in California the output of gasoline from that source is still so small a proportion of the total output as to be practically negligible. For the year 1925 about 89 per cent of the total gasoline output of California came from straight run distillation—about 10 per cent from natural gasoline—and less than 1 per cent from cracking.

The essentially different quality of California crude, and the very slight change in the percentage recovery of the four major products from it, are clearly indicated by the following tabulation—all amounts in percentages:

Year—	Gaso. Recv.	Fuel Oil Recv.	Kero. Recv.	Lub Oil Recv.
1918	14.8	72.6	3.5	2.3
1919	13.1	72.1	6.3	2.1
1920	15.4	68.4	6.4	2.9
1921	14.3	70.3	4.5	2.2
1922	16.0	70.0	4.5	1.9
1923	21.6	68.9	3.6	1.6
1924	21.0	68.7	4.7	1.7
1925	22.6	69.3	3.4	1.3

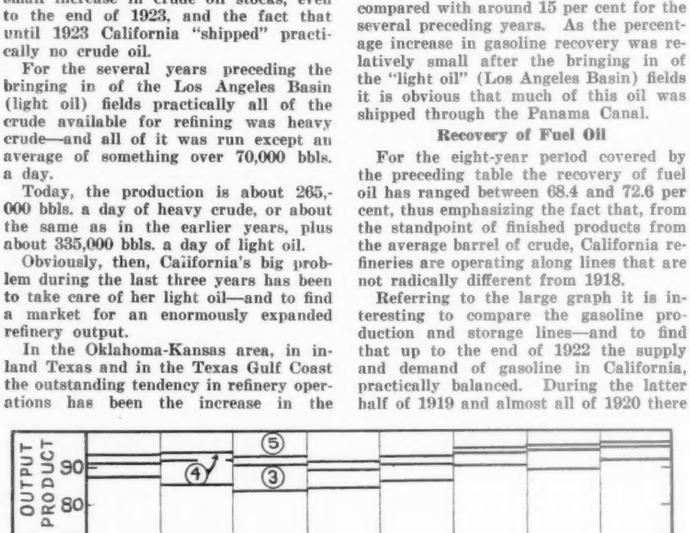
With practically no cracking in California the increase in the gasoline recovery, beginning in 1923, is due entirely to the inherently better quality of the crude.

In this connection it is interesting to note that while previous to 1923 the production of crude in California, according to present methods of classification, was practically all "heavy" oil, and that today over half of the production is "light" oil, the percentage of gasoline recovery for the last three years has stood at between 21 and 22 per cent compared with around 15 per cent for the several preceding years. As the percentage increase in gasoline recovery was relatively small after the bringing in of the "light oil" (Los Angeles Basin) fields it is obvious that much of this oil was shipped through the Panama Canal.

Recovery of Fuel Oil

For the eight-year period covered by the preceding table the recovery of fuel oil has ranged between 68.4 and 72.6 per cent, thus emphasizing the fact that, from the standpoint of finished products from the average barrel of crude, California refineries are operating along lines that are not radically different from 1918.

Referring to the large graph it is interesting to compare the gasoline production and storage lines—and to find that up to the end of 1922 the supply and demand of gasoline in California, practically balanced. During the latter half of 1919 and almost all of 1920 there was an average of only about 15 days' supply of gasoline in California. During 1925 the average gasoline stock was about three times as great as the monthly production. In January, 1926, the gasoline output was 166,245,000 gallons—the largest that California refineries have ever made. The curve for gasoline in storage is also starting up—and gasoline stocks will undoubtedly increase substantially by early summer.



California refining area. Percentage of gasoline, fuel oil, kerosene and lubricating oil made from refinery runs. Space 1, gasoline; 2, fuel oil; 3, kerosene; 4, lubricating oil; 5, all other products, including losses. Data from United States Bureau of Mines.

For the last half of 1925 the monthly average output of fuel oil in California was 506,000,000 gallons compared with a monthly average of 395,000,000 gallons for the first half of the year. In other words, fuel oil production in California averaged 110,000,000 gallons a month more during the last half of 1925 than during the first half. And as fuel oil stocks in California had reached 876,000,000 gallons at the end of April, 1925, when they faded out of the picture by being included with heavy crude stocks, it is probably true that fuel oil in storage in California today is not less than it was in April, 1925.

Refined Storage

Nothing can happen in California, in 1926, that, from a barrelage standpoint, would affect the general situation proportionately to what happened in 1923 and in smaller measure in 1924 and 1925.

In 1923 the dominating factor was the crude surplus above refinery runs—in January, 1926, crude oil was being turned into finished products at a rate that left an average of only 85,000 bbls. a day above refinery runs. The problem had shifted from crude storage to refined products storage—and it is with the refiner today.

And a measure of the importance that the oil industry in California attaches to its heavy stocks, as compared with current supply and demand, is clearly reflected by the recent advance in the price of crude oil and gasoline.

Late Fields

(Continued from Page 29)

1 Wolf though not completed is swabbing oil at the rate of 125 bbls. at 1,347 feet and Pink Hammond's No. 1-B Oldham is swabbing 570 bbls. at 1,381 feet. The Primrose Petroleum Co.'s No. 6 Wolf is making about 100 bbls. from 1,341-70 feet, and the Texhoma Oil & Refining Co.'s No. 5 Wolf is making 245 bbls. at 1,321-50 feet.

Magnolia Pipe Line Co. pumped the first oil from the Panhandle Field to its big storage tanks on Tuesday. The company has two 55,000-bbl. tanks just about completed and is now purchasing Panhandle crude at its price posted last week.

Humble Oil & Refining Co. has a good well in north Brown County, No. 3 Allen, which is making 300 bbls. at 1,123 feet.

Gwinnup and others' No. 2 Dibrell, in northeastern Coleman County, is making 20 bbls. and 2,000,000 feet of gas at 1,895 feet. Canary and others' No. 2 Morris is making 2,000,000 feet of gas at 73 feet.

The Texas Co.'s No. 1 Tod, in Crockett County, testing 4,750,000 feet of gas at 1,705 feet, will be drilled deeper.

OKLAHOMA

North of the Wewoka Pool Tommy Atkins and others' No. 1 Miller, NE cor. NE NW, Section 9-8-8, had 250,000 feet of gas at 3,307 feet.

The Laurel Oil Co.-Detrick and others' No. 1 Lee, SE cor. SE NW, Section 10-9-10, had sand at 2,840-45 feet, and made one small flow. The well is estimated at 60 bbls. in its present condition, and is shut down for tankage.

Magnolia Petroleum Co.'s No. 1 Sporleder, SW cor. NE, Section 35-15-5, in the Davenport Pool, made 40 bbls. from a total depth of 3,421 feet.

The Wewoka deep sand area was extended a quarter mile to the east by the Amerada Petroleum Co.'s No. 1 Harjo, NW cor. NE NW, Section 5-7-8, which found the Wilcox sand at 4,134-38 feet and made 2,940 bbls. the first 24 hours. The oil tested 40.5 degrees Baume at a temperature of 76 degrees Fahrenheit.

Magnolia Petroleum Co.'s No. 1 Norville, SW cor. SE SW, Section 14-8-7, found a member of the Deaner formation at 3,239-45 feet and made 290 bbls.

In the Deep Rock Pool, the Deep Rock Oil Co.'s No. 1 Givens, NW cor. NW SW, Section 23-18-3, had sand at 4,230-55 feet and made 1,348 bbls. in 13 hours. It is estimated at 2,400 bbls. daily.

In Creek County the Gypsy Oil Co.'s No. 5 Ponds, an old well, SE cor. SW SE, Section 2-14-8, han sand at 2,465-98 feet and made 45 bbls. after a shot of 70 quarts.

C. G. Tibbens' No. 1, CEL NW, Section 5-14-9, made a small flow from a total depth of 3,070 feet and is shut down for tankage. No. 2, SW cor. NE, Section 25-15-8, had sand at 2,396-2,446 feet and made 15 bbls. after a shot of 90 quarts.

Southeast of Cushing Alvord & West's No. 4, CSL NW SE, Section 14-17-8, had sand at 2,330-67 feet and was shot with 80 quarts and made 60 bbls.

The Atlantic Oil Producing Co.'s No. 7, NW cor. SW SE, Section 14-17-8, had sand at 2,223-66 feet and made 35 bbls. after a shot of 80 quarts.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Mar. 23.—Magnolia Petroleum Co. has begun checking the production of O. W. Killam at Mirando Field, having purchased the production for $900,000 or $400 a barrel subject to 30 days check, the production to average over 2,000 bbls. daily. The production has had a safe margin above that.

ACTIVITY INCREASING IN MANY FIELDS

(Continued from Page 29)

The well of the Mid-Kansas Oil & Gas Co., near Eliasville, Stephens County, it is now reported, had an initial output of 3,640 bbls., producing from the gray lime at 3,179 feet.

The E. L. Smith Oil Co. has one of the best producers brought in in northern Brown County, the well flowing at the rate of about 70 bbls. an hour although not yet completed.

Humble Oil & Refining Co.'s No. 3 Allen, north Brown County, is making 300 bbls. Gwinnup and other's No. 2 Dibrell, in northeastern Coleman County, is making 20 bbls. and 2,000,000 feet of gas.

The Texas Company's No. 1 Tod, Crockett County, testing 4,750,000 feet of gas at 1,705 feet, will be drilled deeper.

Mexico

Five of the 14 completions in Mexican fields during the week were producers, totaling 6,400 bbls. The best was Credito Petrolero's No. 6 in the Piedras sector of the old Panuco Field, rated 5,000 bbls.

San Juan Basin

The beginning of laying pipe for the line from Gallup to the San Juan Basin on Monday marked the first step to connect that field with the markets. It is expected to have oil running by July 1. It is hoped to have the 4-inch line carry 10,000 bbls. daily, the high gravity of the Hogback and Rattlesnake oil being equivalent almost to gasoline.

Congressional attention is being given to possible amendment of the law regarding leasing in the Navajo oil lands. Question of royalties and term of lease are under consideration at Washington.

Canada

In the Turner Valley Field Vulcan Oil's No. 1, offsetting Royalite No. 4 gusher, encountered another light oil show around 4,000 feet. Reported fishing for lost bit at 4,100 feet.

McLeod Oil Co.'s No. 2, same field, reported making 1,500,000 feet of wet gas and some oil in the hole.

Texas Panhandle

The Magnolia Pipe Line Co. pumped the first oil from the Panhandle Field to its storage tanks. It has two 55,000-bbl. tanks about completed and is purchasing Panhandle crudes at the price posted last week.

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Imports of crude and refined oils at the principal United States ports for the week ended March 13 totaled 1,820,000 bbls., a daily average of 260,000 bbls., compared with 1,659,000 bbls., a daily average of 237,000 bbls. for the week ended March 6, and a daily average of 229,357 bbls. for the four weeks ended March 13.

At Atlantic Coast Ports	Week ended March 13
Baltimore	30,000
Boston	65,000
New York	551,000
Philadelphia	139,000
Others	318,000
Total	1,103,000
Daily average	157,571
At Gulf Coast Ports	
Galveston district	170,000
New Orleans and Baton Rouge	383,000
Port Arthur and Sabine district	130,000
Tampa	34,000
Total	717,000
Daily average	102,429
At all United States Ports	
Total	1,820,000
Daily average	260,000
Daily average four weeks ended	229,357

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended March 13 totaled 847,000 bbls, a daily average of 121,000 bbls., against 232,000 bbls., a daily average of 33,143 bbls. for the week ended March 6, and a daily average of 83,393 bbls. for the four weeks ended March 13.

At Atlantic Coast Ports	Week ended March 13
Baltimore	92,000
New York	292,000
Philadelphia	139,000
Others	324,000
Total	847,000
Daily average	121,000
At Gulf Coast Ports	
Total Atlantic & Gulf Coast Ports	847,000
Daily average	121,000
Daily average four weeks ended	83,393

PETROLEUM RECEIPTS IN EAST INCREASED DURING FEBRUARY

By N. O. Fanning

New York Bureau, The Oil and Gas Journal, 30 Church St., New York

NEW YORK, Mar. 13.—Estimated receipts of crude and refined oil at Atlantic Coast ports during February were 14,744,000 bbls., a daily average of 527,000 bbls. This daily average represents a material increase over that of January, which was 434,000 bbls. Total receipts in January were 13,448,000 bbls.

Compared with February of 1925, receipts also show an increase. The total for February of this year compares with 12,866,000 bbls. last year and represents an increase of 1,878,000 bbls. The daily average for this year shows a gain of 67,000 bbls. over February, 1925.

The interesting feature of the February report for this year is the sudden increase in imports from Mexico, which totaled 2,933,000 bbls., against 1,999,000 bbls. in January, an increase of 934,000 bbls. They are still lower than those of February of last year, which totaled 3,636,000 bbls.

Imports from South America in February fell off from the January total, amounting to 534,000 bbls., against 973,000 bbls. in January, which latter month represented a high record. The decline in imports from South America can be attributed apparently to the larger amount taken from Mexico by leading oil companies.

The following table shows total receipts of crude and refined oil (estimated) by water at Atlantic Coast ports, from the Gulf and Pacific Coasts of the United States, and imports (in barrels):

	Feb., 1926	Jan., 1926	Feb., 1925
Baton Rouge, N. Orleans..	2,078,000	1,880,000	1,602,000
Pt. Arthur, Sabine, Beau...	3,882,000	3,833,000	2,783,000
Texas City, Hous., Gal...	3,302,000	2,908,000	2,922,000
Gulf Coast	9,262,000	8,621,000	7,307,000
Pac. Coast ...	2,015,000	1,855,000	1,445,000
Mexico	2,933,000	1,999,000	3,636,000
So. America .	534,000	973,000	478,000
Total	14,744,000	13,448,000	12,866,000

The following table shows daily average receipts (in barrels):

	Feb., 1926	Jan., 1926	Feb., 1925
Baton Rouge, N. Orleans..	74,000	60,000	58,000
Pt. Arthur, Sabine, Beau...	140,000	124,000	100,000
Texas City, Hous., Gal...	118,000	95,000	104,000
Gulf Coast.	332,000	279,000	262,000
Pac. Coast	73,000	59,000	51,000
Mexico	104,000	65,000	130,000
So. America...	18,000	31,000	17,000
Total	527,000	434,000	460,000

Receipts from the Pacific Coast are gradually increasing. Since the low mark of last November they have increased almost 100 per cent.

REQUA'S IDEA OF CONSERVATION IS BETTER CRUDE UTILIZATION

Mark L. Requa is a firm believer in President Coolidge's Oil Conservation Board; in the fact that the oil industry is in for a prosperous year and in the conservation of petroleum by means of a better and more generally useful utilization of petroleum.

Mr. Requa reached Tulsa Monday to remain a few days and renew old friendships made during the stirring days of the World War when he headed the oil and gas division of the Fuel Administration, War Service Board, and on Tuesday evening a banquet was given in his honor at the Mayo Hotel by the executive committee of the Kansas-Oklahoma division of the Mid-Continent Oil & Gas Association.

Mr. Requa is on his way from Washington, D. C., to his home in San Francisco, Calif. He appeared before the Federal Oil Conservation Board at its session held in February and during his stay in Washington was impressed with the sincerity of President Coolidge and the Conservation Board in assisting the industry to solve the problems occasioned by the peculiar complexities under which the industry must function. Mr. Requa believes the President's plan was constructive and that in the end much good will come out of the intimate contact between the best minds of the industry and the representatives of the National Government.

The tremendous mass of information gathered by the Conservation Board is being carefully reduced to its essentials by subcommittees and ultimately the board will be presented with it in a form that will make it mentally digestible.

In Mr. Requa's opinion the board will continue as such throughout the Coolidge administration.

Notwithstanding recent clouds in the sky of the general business world, Mr. Requa, from what he could learn in the East, is optimistic of the immediate business future and he looks for a 16 per cent increase in the consumption of gasoline in the United States as compared with last year.

Mr. Requa's idea of the meaning of the term conservation in the oil industry is better utilization. Approximately half of the oil produced in the United States is in the form of fuel oil when the refineries are through with it, he said, and this fuel oil contains approximately 75,000,000 bbls. of gasoline, 50,000,000 bbls. of Deisel oil and 20,000,000 bbls. of lubricating oil that should be recovered, rather than to burn it as fuel oil under boilers. Mr. Requa does not fear a famine in oil in the next few years, but in looking far into the future he feels that the industry is producing too much oil in the face of the greatly improved and steadily improving processes by which more essential products may be recovered from it, and that by so doing is speeding the time when a real shortage of crude oil will be faced and with the industry being left with little but vain regrets.

His attention having been called to the Texas Panhandle, where a great overdevelopment is threatened as soon as the region is provided with pipe lines, Mr. Requa expressed the regret that the producing industry could not come to agreements on drilling without falling afoul of the law.

He could see where the immense Panhandle district might be made a field for fake oil promoters, but he did not believe the industry should be expected to make war on these illegitimate stock operators, and that the Federal Government, having the power and the machinery, could get rid of those pests as the Federal Government did with those operating out of Fort Worth, Tex., and El Dorado, Ark.

At the banquet given Mr. Requa at the Hotel Mayo, William G. Skelly, president of the Skelly Oil Co., acted as toastmaster.

NORTH TEXAS MARKET DECIDEDLY IMPROVED

FORT WORTH, Tex., Mar. 20.—This week has brought quite a decided improvement in the refined oil markets of North Texas. Probably the best improvement is shown in the export gasoline market, but there is also a marked improvement in the fuel oil situation, with both kerosene and United States motor oil holding rather firm.

Export firms purchased about 500 cars of export gasoline, which served to push the market slightly higher, to 12¼ cents and also put the market on this product in excellent shape for some further advances the coming week, provided there is just a little more buying. This is one of the best movements of export business this territory has enjoyed in some weeks.

The U. S. Motor market is not in such good shape, though the market is around 9⅞ to 10 cents in the Wichita Falls territory. There is a firm price of 9½ cents on 56-58 450 end point. There are a few refiners who are still filling contracts on U. S. Motor and some of this is forced to move at prices which allow refiners only a very narrow margin, if any profit at all.

Railroads have been in the fuel oil market for considerable fuel oil and the market has stiffened considerably. Refiners are also on reduced runs which has made for a little scarcity in this product and they are not particular about making shipments at present prices, around $1.37½ to $1.40. Some refiners have told customers they would make shipments at these prices only if it would be an accommodation, which certainly indicates considerable strength.

The market on kerosene is firm and steady, with practically no changes during the past week or two. Prices on 41-43 water white kerosene are quoted at 6¾ to 7 cents.

BIG TREATING PLANT SAVES LARGE SUM

(Continued from Page 22)

was cold, the oil would remain in the pits for long periods. This resulted in the income from production of this character being tied up until such time as the oil was cured. Sun treating was never successful and was used only in small production where the expense of steam stilling oil was prohibitive owing to the meager return.

Steam stilling cut oil has been successfully practiced for many years, and in principle is almost identical with the treating of oil at Smackover. In using this method, an ordinary tank (usually the 500-bbl. size) was rigged up with special fittings. In the bottom of the tank, coils of 2-inch pipe were fitted, and into these the live steam was turned. The tanks were filled with oil, and in order to protect the oil from being burned too severely, the bottoms of the tanks were filled with water. After being permitted to cook the oil, the steam was released, and the process repeated. The disadvantage of steam stilling oil was the time required to fill and empty the tanks. In the cooking apparatus at Smackover, this is eliminated by the continuous operation of the equipment.

In the Smackover Field, the increased intrusion of water may have a tendency to increase the amount of b.s. in the oil. In this event, the larger types of cooking vats may become general in that region. At present, the Humble is in a class by itself.

H. G. OFFICER CHANGES POSITION

H. G. Officer, district geologist for Sinclair Oil & Gas Co., with headquarters in Enid, Okla., has resigned his position with that company. After April 15 he will be with the land department of the Amerada Petroleum Corp.

OKLAHOMA GASOLINE DEMAND IMPROVES

(Continued from Page 20)

this time is attributed largely to the moderating weather and drying up of roads in the northern and eastern states. It has been the general opinion of refiners for some time that jobbers were only waiting the first indication of favorable motoring weather before filling their tanks.

The appearance of exporters in the picture last week in all probability hastened the decision of jobbers to buy and as it has been felt for some time that gasoline prices could not go much lower, they apparently did not feel it necessary to wait longer.

Considerable discussion has been caused in the last week over natural gasoline contracts. Two large purchasers of natural gasolines so far have not renewed their contracts. One of these company's contracts expired the first of the year, while the other company has contracts expiring the last of this month and April. The latter company so far apparently has made no effort to renew them.

However, these contracts are partly offset by those of the New Orleans Refining Co., a company which last year did not buy extensively in this field. This company, in addition to its regular monthly contract purchases, which are to begin April 1, has been buying fairly large quantities of natural gasoline on the open market. Considering the uncertainty of contracts, market students have been hesitant on making speculations on natural gasoline trends this year. At present these products are extremely inactive and prices have suffered more than any other product on the market. However, as soon as the New Orleans Refining Co. contract begins, better market conditions are expected.

Gasoline and Naphtha

As previously mentioned, gasolines generally were advanced in prices during the week. The advance in the U. S. Motor was the first for that grade since the crude raise February 1, the period since then being one of steadily declining prices. While a week ago this product was easily obtainable at 9¾ cents and later in the week as low as 9½ cents, refiners Tuesday were holding out for 10 cents. Some were quoting as high as 10¼ cents. Export purchases of higher gravities also served to boost quotations on those products with 64-66, 375 gasoline quoted Tuesday at 12 to 12¼ cents and the 60-62 400 gasoline at 11 to 11¼ cents. Other products were not particularly active but prices were slightly higher and firmer in sympathy with the general trend.

Natural Gasoline and Blends

Natural gasolines and blends continued inactive. A better feeling was apparent among manufacturers Tuesday as a result of firming of straight run products but there was not sufficient demand to cause an advance in prices, which were practically unchanged from those of a week ago.

Kerosene and Distillates

A sluggish demand for kerosene had its effect on kerosene during the week and Tuesday 41-43 water white product could be obtained as low as 6½ cents and the 42-44 water white grade at 7 cents. These quotations represented declines of from an eighth to a quarter cent in the last seven days.

Distillates, on the other hand, were stronger than ever and buyers practically were unable to find any of the product on the market. The 38-40 grade was from 4⅜ to 4½ cents and the 36-38 product from 4¼ to 4⅜ cents. Demand for this product for cracking stock and also for furnace oils in northern states so far has not shown signs of abatement.

Fuel Oil and Gas Oil

As was the case with distillates, fuel oils and gas oils were even stronger the past week than in the previous week. Lower gravity fuels also became active due to the demand of industrial users who are turning to these grades because of their inability to purchase higher gravity fuels, which they have been accustomed to buying. As a result all fuels were scarce and prices higher. Below 22 fuel was quoted Tuesday at $1.20 to $1.22½; 22-26 fuel at $1.22½ to $1.25; 24-26 fuel at $1.30 to $1.32½, and 28-30 fuel as high as $1.45 and $1.50.

Gas oil also was almost unobtainable even with buyers offered as high as 4¼ cents for the better grades. Fuel oil, gas oil and distillates have been becoming scarcer and scarcer each week due both to increased demands for cracking stock and for industrial and public consumption.

Lubricating Oils and Wax

Lubricants and wax were unchanged during the week. The generally unsettled position of lubricants continued and price concessions were general.

U. S. Supreme Court Decides to Review Naval Oil Leases

WASHINGTON, D. C., Mar. 22.—The United States Supreme Court agreed today to review lower court decisions cancelling the oil leases and contracts which Edward L. Doheny negotiated with Albert B. Fall, as secretary of the interior.

Involved in the case are the Elk Hills naval oil reserves in California and the contract between Doheny's companies and the Government by which Doheny constructed oil reserve tanks for the Navy at the Hawaiian naval base at Pearl Harbor.

While agreeing on cancellation the District Court and the Circuit Court in California disagreed on compensation for the storage tanks. The District Court allowed $10,000,000 but the Circuit Court overruled that decision.

The Supreme Court is expected to go into all phases of the case and particularly the legality of the executive order issued by President Harding transfering jurisdiction over the naval oil reserves from the Navy to the Interior Department.

The civil actions grew out of the investigation two years ago into the leases made by Fall in the Elk Hills, Calif., and Teapot Dome naval oil reserves in Wyoming.

ENGINE DISTILLATE HIGHER IN CALIFORNIA

LOS ANGELES, Calif., Mar. 20.—As was expected, the price of engine distillate was also increased following the recent gasoline price advance. Engine distillate now sells from 11 to 12 cents (state tax excluded). Very little of this product is being consumed at present.

The kerosene market has been steadily strengthening the past few weeks and prices have accordingly moved upward Most local sales of kerosene for the past several months have been made by the smaller independent refiners. The product marketed has varied in both quality and price to a noticeable extent. As the demand improved the quality became poorer and today there is practically no 40-42 gravity kerosene on the market. The best kerosene is around 38-40 gravity with considerable quantities available of even lower gravity. The very low gravity oil is being used principally in the export trade.

The better grade of kerosene is being sold for domestic consumption at present at from 9 to 10 cents by most of the smaller refiners. Some are selling slightly under these prices while the large companies are asking even higher prices. The big marketing companies have, however, quoted kerosene at higher prices than the independents for some time.

The shift in China from British kerosene to American has improved the demand for California cased kerosene to such an extent that prices have gone up. The small refiners also enjoy the biggest proportion of this business and the price spread is considerable. Cased kerosene is selling at anywhere from $1.72 to as high as $1.88 C. I. F. Shanghai. The freight costs, handling charges and insurance amount to about 27 cents a case which makes the lowest price at Los Angeles about $1.45 a case for export kerosene. There are ten gallons in a case.

Local gasoline sales have been rather weak during the week. Shipments to the East of both crude and gasoline also fell off, probably due to the rise in prices. However, the big companies have contracts with eastern oil companies that have not yet run out and these will assure the movement of a fair volume of petroleum products out of Los Angeles Harbor for eastern ports for some time to come.

ARTESIA, NEW MEXICO

(Continued from Page 46)

2 Mann permit, Section 3-18-27, drilling; Danciger Oil & Refining Co's. No. 2 Beeson, Section 18-28-28, shut down due to broken engine; Danciger Oil & Refining Co's. No. 2 Ragsdale, Section 18-18-28, location; Dome Oil Co's. No. 4, NE cor. of NW of SE, Section 21-18-28, cleaning out after shot; No. 5, Section 17-18-28, drilling at 1,700 feet; Empire Gas & Fuel Co., Section 31-24-17, drilling; Flynn Welch & Yates' No. 30, Section 21-18- 28, drilling at 1,700 feet; No. 38, Section 3-18-28, on production; No. 39, SE, Section 21-18-28, on production.

CENTRAL WEST

(Continued from Page 48)

Ricart farm, Section 8, Brown Township, Knox County, is reported at 3 bbls. from the Berea sand.

In Barlow Township, Washington County, there is quite a stirring activity in the development of gas production. Sams and others' test on the A. F. Male farm, Section 698, is a fair gas well in the Maxon sand. The Muskingum Gas Co. has a nice gasser at a second test on the Scott & Foster lease, Lot 1,030, the gas coming from the Big Injun sand, and another fair gas well in a test on the Lizzie Palmer, Lot 753, from the Maxon sand.

In Coal Township, Perry County, the Rempel National Bank's No. 3 Hazleton farm, Section 28, showed a flush of 95 bbls. after given a dose of nitroglycerin. The Reno Oil Co.'s No. 1 on the N. W. Starr farm, Section 34, Falls Gore Township, Hocking County, showed a little gas in the Berea sand.

Indiana Field

No completions were reported from any part of the Indiana Fields for the week, although a showing is reported in a wildcat venture on the Buchannon lease, one-half mile southeast of Patton, Ill., but across the Wabash River in Lot 50, Decker Township, Knox County, Indiana. This is one of a series of tests being made in this township, and oil men are hopeful that a field will develop. The well, while it had a showing, is being drilled deeper in hopes of the discovery of a commercial producer.

In Patoka Township, Gibson County, the Ohio Oil Co. has abandoned Nos. 1 and 3 Mumford heirs farm, Section 2, and the Consolidated Oil & Development Co. did the same with its No. 1 John and E. Tulley farm, Section 3. In Washington Township, same county, the Ohio Oil Co. pulled out No. 1 on the Lester R. Cunningham farm, Lot 121.

Illinois Field

W. M. Price, of Allendale, has returned from Florida, where he was spending the winter at Orlando. He states that they are now drilling a test on the west coast about 100 miles west of Orlando.

In the Allendale Field of Wabash Township, Wabash County, another interesting find has been made by the Max Oil Co. in its No. 6 on the Holson-Dorney lease, Section 18, where three producing sands were encountered. They were the Biehl, Jordon and Holson-Dorney sands, and the well has all the earmarks of a good one, being estimated better than 100 bbls. On another part of the Holson-Dorney tract, the Dane Oil Co.'s No. 3, located 200 feet from the north line and 300 feet from the east line of the tract, in the northwest quarter of Section 18, is reported at 80 bbls. Top of sand was found at 1,478 feet and drilled 20 feet in the sand. Mack Leighty and others did not fare so well at their test in the southeast corner of the School House Lot, in the southeast quarter of Section 11, near Allendale, in the same township, as it was dry. The Review Oil Co.'s test, 600 feet from the south line and 300 feet from the east line of the Mary Storckman farm, in the northwest quarter of Section 2, and west of Allendale, was a duster at 1,600 feet. Foreman and others' second test, in the northwest corner of the Cisil heirs' farm, in the south west quarter of Section 1, Wabash Township, is credited with a production of 20 bbls., with top of sand at 1,545 feet and drilled 13 feet in the sand.

Three miles southwest of Allendale, in Section 24, Wabash Township, W. C. McBride's No. 3 on the Nova Keen Marcotte farm, is reported showing for a nice producer, with No. 4 starting. No. 7 of the Adams Corner Oil Co., on the Mack Madden farm, Section 7, same township, is making a nice showing.

The Mount Carmel Community Oil Co. has made a location for a test on the Charles Chapman farm, in the southwest quarter of Section 7, Mount Carmel Township, Wabash County, a short distance northwest of the Country Club and some 2 miles northwest of Mount Carmel. The well is reported spudding.

The Mahutska Oil Co. drilled in a 40-bbl. flush well near the northeast corner of the A. Reedy 40 acres, in the northwest quarter of Section 29, Oblong Township, Crawford County, the oil being found at a depth of 963 feet.

According to a report of the Illinois Chamber of Commerce, there were in Illinois a total of 16,900 producing oil wells on December 31, 1925.

STANDARD OF N. Y. AND GENERAL PET. TO MERGE

(Continued from Page 24)

and refining capacity of 107,500 bbls. daily.

Pacific Coast organizations involved in mergers or negotiations for mergers number three, with capital of $314,000,000, assets of $325,000,000 and refining capacity of 97,500 bbls. daily. They are Pacific Oil Co., Associated Oil, and General Petroleum.

Others Mentioned

In addition, three large independent oil companies have been mentioned in connection with possible combinations, but all only in the "rumor" stage. They are The Texas Company, Union Oil Co. of California and Gulf Oil Corp. These three companies, combined, have capital of $414,000,000, assets of $932,000,000 and refining capacity of 360,000 bbls. dailyg.

Adding the eight companies in consolidations, actual or in process of negotiation, to the three mentioned above, makes eleven independent companies, with capital of $1,256,000,000, having assets of $1,970,000,000 and refining capacity aggregating 753,500 bbls. daily, concerned in the merger field, either actually or by "report".

Age of Consolidation

The combining of companies with assets of more than a billion dollars certainly indicates we are in an "age of consolidation" so far as the oil business is concerned. This has great significance from the viewpoint of the oil trade, naturally, in view of the overproduction of oil during the last few years, and the strong movement on the part of the oil business to eliminate waste.

These mergers are expected to eliminate considerable lost motion in the oil business, and may contribute largely toward stabilizing an industry which is of vital importance to the country.

The 11 Companies

The following table shows capital, assets and refining capacity of the 11 independent companies:

	Capital	Assets	Ref. Cap.
Pacific Oil Co.	$ 175,000,000	$ 95,000,000	.....
Associated Oil Co.	80,000,000	124,000,000	47,500
General Petroleum Corp.	59,000,000	106,000,000	50,000
Union Oil Co. of California	95,000,000	155,000,000	90,000
Pan American Petroleum Co.	150,000,000	195,000,000	*165,000
Tide Water Oil Co.	76,000,000	111,000,000	25,000
Barnsdall Corp.	36,000,000	48,000,000	25,000
Magnolia Petroleum	197,000,000	213,000,000	50,000
Humble Oil & Refining Co.	69,000,000	146,000,000	31,000
The Texas Co.	165,000,000	397,000,000	§160,000
Gulf Oil Corp.	154,000,000	380,000,000	110,000
Total	$1,256,000,000	$1,970,000,000	‡753,500

*140,000 bbls. daily capacity in Mexico.
§ 10,000 bbls. daily capacity in Mexico.
‡150,000 bbls. daily capacity in Mexico.

Holmes and others' No. 1 Smith is making 10,000,000 feet of gas at 2,580 feet and the 6⅝-inch casing is being run at this depth. Middleton and others are pulling the big casing in No. 2 Weatherly preparatory to completing the well as a gasser. It has been drilled to 3,248 feet.

The Phillips Petroleum Co.'s No. 1 J. A. Whittenburg is making 15,000,000 feet of gas daily and is still drilling at 2,830 feet. Top of the gas was found at 2,715 feet. The Newby Oil Co.'s No. 1 Cockrell is showing for 2,000,000 feet of gas at 2,750-75 feet and is now drilling at 2,835 feet.

Hutchinson County Drilling

American Refining Co.'s No. 1 J. A. Whittenburg, drilling at 2,670 feet; Badger Oil Co.'s No. 1 Lewis, fighting cave at 2,085 feet; Canyon Oil Co.'s No. 1 P. A. Whittenburg, fishing at 2,330 feet; No. 2, drilling at 500 feet; Cockrell McIlroy Oil Co.'s No. 1 Smith, drilling at 495 feet; Crosbie and others' No. 1 J. A. Whittenburg, showing oil at 2,900 feet; Currie Brothers' No. 1 Smith, fighting cave at 2,880 feet; Dixon Creek Oil Co.'s No. 3 Smith, fighting cave at 1,950 feet; No. 4 Smith, drilling at 1,400 feet; Dunnigan and others' No. 1 J. A. Whittenburg, 2,905 feet; Fly-Blackburn Oil Co.'s No. 1 Weatherly, spudding; Gates Oil Corp.'s No. 1 Kingsland, drilling at 1,500 feet; No. 2 Kingsland, 1,440 feet; Gibson Oil Corp.'s No. 1 Johnson, spudding; Golding Phillips Oil Co.'s No. 1 Hodges, drilling at 1,925 feet; Heywood and others' No. 1 Cockrell, 1,700 feet; Holmes and others' No. 1 Smith, setting casing at 2,580 feet; Lucky Ten Oil Co.'s No. 1 Smith, drilling at 400 feet; McIlroy Brothers' No. 1 Smith, 510 feet; McIlroy & Herring's No. 2 Smith, spudding; McMan Oil Co.'s No. 1 Johnson, drilling at 410 feet; Morton and others' No. 1 Johnson, spudding; Phillips and others' No. 1 Weatherly, fighting cave at 3,096 feet; Phillips & Heywood's No. 1 Smith, underreaming; Phillips Petroleum Co. and Gibson Oil Corp.'s No. 2 G. A. Whittenburg, showing oil at 2,700 feet; Phillips Petroleum Co. and Pulaski Oil Co.'s No. 1 Cockrell, fighting cave at 2,330 feet; No. 1 Whittenburg, spudding; Phillips Petroleum Co. and others' No. 1 Johnson, drilling plug at 2,917 feet; Phillips Petroleum Co.'s No. 4 Smith, fighting cave at 1,750 feet; No. 1 J. A. Whittenburg, drilling at 2,830 feet; No. 2, 2,240 feet; Phillips Petroleum Co. and Pulaski Oil Co.'s No. 1 Johnson, fighting cave at 2,020 feet; Prairie Oil & Gas Co.'s No. 2 Weatherly, pulling big casing at 2,188 feet; Relief Oil Co.'s No. 1 Smith, running casing at 410 feet; Roxana Petroleum Corp.'s No. 1-B Smith, drilling at 439 feet; No. 3 Smith, spudding; Skelly Oil Co.'s No. 1-A Johnson, spudding; No. 1 J. A. Whittenburg, drilling at 2,888 feet; No. 2 J. A. Whittenburg, fighting cave at 2,020 feet; No. 3, fighting cave at 2,000 feet; Spring Creek Oil Co.'s No. 1 Smith, drilling at 450 feet; The Texas Company's No. 1 Cooper, drilling out plug at 2,225 feet; No. 7 Burnett, underreaming; Twin Six Oil Co.'s No. 3 Kingsland, fishing at 380 feet; No. 4 Kingsland, fishing at 2,760 feet; Ward and others' No. 1 Cockrell, running casing at 2,175 feet; White Eagle Oil & Refining Co.'s No. 1 Johnson, drilling at 1,640 feet; No. 3 Smith, spudding.

Carson County

Amarillo Oil Co.'s No. 2-B Bivins has tools stuck in casing at 3,000 feet; Cosden and others' No. 1 Burnett, drilling at 2,815 feet; Magnolia Petroleum Co.'s No. 2 Burnett, 1,930 feet; Marland Oil Co.'s

FAIL TO INCREASE TWO WELLS IN GRAY CO.

(Continued from Page 31)

still drilling at 3,172 feet. The well has 600 feet of oil in the hole from the granite wash formation. The No. 2 J. A. Whittenburg of the Phillips Petroleum Co. and the South Hutchinson County Oil Co. has 1,000 feet of oil in the hole, which is coming from 2,880 feet. It is now drilling at 2,897 feet.

No. 1-A Burnett, 2,840 feet; No. 1-B Burnett, 2,120 feet; Young and others' No. 1 McConnell, spudding.

Gray County

Clark and others' No. 1 Merten, spudding; The Texas Company's No. 1 Brown, drilling at 1,525 feet; No. 2 Saunders, running casing at 1,665 feet.

Wheeler County

Midwest Exploration Co.'s No. 2 Porter, spudding; Vaughan and others' No. 1 O'Gorman, spudding.

Potter County

Amarillo Oil Co.'s No. 4-A Bivins, fishing at 3,005 feet; Prairie Oil & Gas Co.'s No. 1 Bivins, drilling at 3,115 feet.

Moore County

Clark and others' No. 1 Sneed, spudding.

GAS LESSEES MEET

Problems confronting the gas lessees in the Osage Nation of Oklahoma as a result of the constantly growing practice of restoring pressure through the introduction of gas or air into the sands were discussed by 15 representatives of companies holding gas leases in the Osage at a meeting held in Tulsa Tuesday morning. A resolution was drawn up and adopted for presentation to the combined meeting of oil lessees, gas lessees and owners of casinghead plants to be held in the rooms of the Mid-Continent Oil & Gas Association in the Cosden Building, Tulsa, Wednesday, March 31. Definition of the term "operating purposes," as used in the Osage gas lease forms, and the ownership of tailhouse vapors were among the chief questions discussed at Tuesday's meeting.

CALCASIEU PARISH GUSHER

SHREVEPORT, La., Mar. 23.—Vacuum Oil Co.'s No. 6 Miller, Section 9-10-9, Calcasieu Parish, Louisiana, is estimated 2,500 bbls. daily at 4,457 feet, flowing through 2¾-inch chokes. The oil is 24.3 gravity.

PETROLEUM GEOLOGISTS TO MEET AT DALLAS

(Continued from Page 41)

Sand) Series of Northeastern Oklahoma," by Luther White.

Special

"Surveying Deep Bore Holes," by A. Anderson; "The Oil Industry and the Public," by Ralph Arnold; "Effect of Flooding Oil Sands With Alkaline Solutions," by R. C. Beckstrom and F. M. Van Tuyl; "Some Generalized Age-Size Production Curves," by E. G. Carpenter; "Mechanics of Mexia and Balcones Faulting," by L. L. Foley; "An Interesting Example of a Survey of a Deep Bore Hole," by F. S. Hudson and N. L. Taliaferro; 1. "The Exploitation of Low Porosity Oil Sands," 2. (With A. A. Arter) "An Analysis of the Barrel-Day Price," by R. H. Johnson; "Geologic Structure of a Porton of the Glass Mountains," by P. B. King; "Water Problems in New Grosny Oil Fields in Russia," by N. T. Lindtrop; "The Observation and Interpretation of Deep Well Temperatures." Requested by committee, by Van Orstrand and Dr. W. T. Thom; "Water Analyses in Relation to Petroleum Exploration," by R. B. Whitehead and Fash.

Opening Session

At the opening session, 10:30 a. m. Thursday in the Convention Hall of the Baker Hotel, the address of welcome on behalf of the Dallas petroleum geologists will be delivered by R. B. Whitehead, chairman, who will introduce John C. Harris, mayor pro tem, whose welcome to Dallas will be responded to by E. DeGolyer, president of the American Association of Petroleum Geologists.

John M. Spellman will speak on "The Future Texas," and after a selection by the Magnolia band of Dallas, "Songs of the Sunny South," the convention will hear words of welcome from the engineering clubs of Dallas, represented by Ralph Bryan, president of the North Texas Chapter of the American Institute of Architects; E. W. Burbank, American Society of Mechanical Engineers; Charles A. Clark, president of the Dallas Members of the American Society of Civil Engineers, and Harry Bernet, president of the Technical Club of Dallas.

The presentation of a group of flags to A. A. P. G., a present from the Dallas petroleum geologists, will follow.

Time Schedule

The general time schedule for all events is as follows:

Thursday, 7 to 10:30 a.m., registration, lobby, Baker Hotel; 10:30 a.m., opening session, Convention Hall, Mezzanine floor Baker Hotel; 12:00 m., Alumni luncheons, hotels; 12:30 p.m., Adolphus complimentary luncheon to the ladies of the convention, Adolphus roof; 1:00 p.m., regular session, nomination of officers and business session, Convention Hall; 7:45 p.m., regular session.

Friday, 9:30 a.m., regular session; 12 m., Alumni luncheons; 1:00 p.m. departure for golf tournament, Akard Street entrance Baker Hotel; 1:00 p.m., ladies leave for Brook Hollow Country Club, Akard Street entrance, Baker Hotel; 6:00 p.m., golfers and ladies leave Brook Hollow Country Club; 7:30 p.m., banquet, roof of Baker Hotel; 9:30 p.m., minstrel show and dance, Convention Hall.

Saturday, 9:30 a.m., election of officers, regular session, Convention Hall; 11:00 a.m., luncheon, ladies, Athletic Club; 1:00 p.m., regular session, Convention Hall.

Committees In Charge

The committees in charge are as follows:

R. B. Whitehead, general chairman, general committee, W. E. Wrather, F. H. Lahee, F. W. DeWolf, Angus McLeod, H. B. Hill, Leon J. Pepperberg and R. B. Whitehead.

Program—W. E. Wrather, F. H. Lahee, F. W. DeWolf, R. E. Rettger.

Publicity—W. E. Wrather, R. E. Rettger.

Reception—Heath M. Robinson, R. E. Shutt, J. W. Bostick.

Registration—Chester A. Hammill, C. E. Decker.

Exhibits—D. M. Collingwood, S. M. Aronson.

Golf Tournament—Heath M. Robinson, Wallace J. Bostick.

Banquet—Angus McLeod, R. E. Rettger, Heath M. Robinson, S. M. Aronson, P. L. Vaudoit.

Finance—Leon J. Pepperberg, Leon F. Russ.

Entertainment—R. B. Whitehead, J. Elmer Thomas, R. E. Rettger, Heath M. Robinson, Angus McLeod, C. H. Row, H. B. Hill.

Reservations—C. H. Row.

Transportation—R. E. Shutt, G. R. Henson, Leon F. Russ, P. L. Vaudoit.

Ladies Entertainment—Angus McLeod.

CHICAGO MARKET BETTER WITH IMPROVED WEATHER

(Continued from Page 127)

contracts at prices that meet the views of the larger buyers. The present active demand is believed to be temporary by many who claim it is due to the unseasonable cold weather of the first half of March and the general prediction of both buyers and sellers is that the excess demand will be over in another two weeks at most. The course of the market after the early part of April will depend very largely, according to the views held here, on the condition of the supply, assuming the demand will be about normal for the season. The coal supply is adequate and prices show a weakening tendency, so more active competition from the coal men may be looked for. The view of many is that with a larger demand for gasoline, crude runs will be increased and this will result in a larger output of fuel and gas oil. The latter may be used for cracking to a greater extent than last year, as the number of cracking stills has been increased, but the larger consumption of fuel oil will be beneath boilers as the quantity of the heavy oils cracked is not materially increased. The industrial situation is improved by the coming of weather favorable to out-of-door work. Building is not generally going forward on as large a scale as last year, but the requirements of structural steel are still large. The auto industries are using more steel than last year and the railroads are large buyers, so that steel companies report an increased demand and prices have an upward tendency. The demand from the gas-making companies is also changing from gas oil to the heaviest fuel oils; recent improvements in the process of gas making have made it possible to produce a gas rich in B.t.u. from the heaviest residual oils, still bottoms and the like. This process is yét available only to the larger gas companies, as the cost of installation is very considerable. In this connection it is noteworthy that the gas companies of the larger cities now supply gas to surrounding towns and a process of consolidation, at least of production, is going on in the gas business similar to that that has taken place in the electric light line.

The Smackover oil is being so variously priced it is hard to determine what is the market. Sellers claim $1.20 a barrel is a low price for a thoroughly treated Smackover fuel oil. These claim the oil sold at prices as low as $1.05 in one instance to a large user who took a large quantity for immediate shipment, is not high grade oil, being oil that had been held in storage, some of it the tops from earthen storage. Another large sale was made at $1.09 per barrel and for ordinary orders the market is $1.10 to $1.15, with little going, except to large buyers, at less than $1.12½. Sales of 28-30 refinery fuel oil have been made at as high as $1.45, with 18-22 fuel oil selling at $1.20 to $1.25.

Lub Sales Small

Lubricating oil sales by jobbers are very small, the station business being characterized as "rotten" by the manager of a large string of service and bulk stations through the territory around this city. On the other hand the future outlook is very good and distributors are making large contracts. There seems to be a considerable movement on the part of well established distributors to contract with some of the best-known refiners for grades of oil of well-known merit. The competition is very keen for business, but there is a more careful buying on the part of many sellers who find their customers are becoming more willing to pay for and want to use higher grades of motor oils. Evidently the educational campaigns of the auto makers and the refiners has borne some fruit. The industrial demand bulks large but the competition is very active, and comparatively small users have been heard to comment on the great desire shown for their business. In this connection one large industrial company recently expressed its appreciation of the service given it by the lubricating engineering department of a large refining organization by enabling it to reduce very greatly the number of grades of lubricating oils used in its plant. It operated many kinds of machines from many different makers and the practice had been to continue to use the grade of oil recommended for that particular machine. The result was that it was buying more than a score of different brands of oils from a number of different companies, some of which were really identical in results obtained. By the aid of the lubricating engineer the number of oils purchased was reduced to five, of which only three were bought in any quantity.

Tank Wagon Position

There have been no tank wagon changes over the territory and the trade does not look forward to any early changes. It is pointed out that the refinery price for Navy gasoline and the Chicago tank wagon and service station prices are each and all 2 cents lower than a year ago. At that time the refinery market in Group 3 averaged 12 cents for Navy against 10 cents today, and the Chicago tank wagon and service station prices were 19 and 21 cents respectively, against 17 and 19 cents at present. This in a way supports the general idea here that the course of the tank wagon price depends on the refinery markets. The head of the distributing department of a complete oil company said that he did not expect any material increase in the tank wagon or service station prices until the actual consumption had increased materially, and that even then he looked for very conservative action on the part of the leading companies in the matter of price increases. Large stocks of finished products usually have a tendency to keep prices down, but it is also a fact that during the period of active consumption of motor oils and fuel the price charged the consumer has little effect on the demand. When the driving season is on the average car owner may kick about the price charged him, but he fills his tank just the same.

OKLAHOMA FIELDS

(Continued from Page 34)

18-9, making 12,000,000 feet of gas at 2,514-44 feet. H. U. Bartlett had timbers for No. 1-A, C SE NE NW, Section 30-18-9.

Tulsa County

In Tulsa County, J. W. McCulloch was spudding his No. 7, CSL NE NE, Section 34-19-11.

North of Tulsa, in the same county, along the Osage line, the Sand Springs Home was spudding its No. 4 Daunenburg, SE cor. SW, Section 2-22-12.

J. H. Middleton was drilling his No. 3, SE cor NE NE, Section 26-22-13, at 680 feet.

Cook & Allen had a 4-bbl. natural well in their No. 2, CWL NW NW, Section 28-22-14, from the first break at 1,335-39 feet.

The Griffin Production Co. was drilling its No. 2, NW cor. NE NE, Section 1-21-12, at 450 feet.

South of Tulsa, L. C. Hivick was drilling No. 2 Rentie, NW cor. SW SW, Section 16-18-13, at 110 feet.

The Pataula Petroleum Co. was spudding its No. 1 Hodge, NE cor. NW NE, Section 8-17-14.

Holmes and others' No. 4, CSL SE SW, Section 14-19-19, was estimated at 12,000,000 feet of gas at 2,290-97 feet and still drilling. The Crown Central Petroleum Corp. completed No. 1, NE cor. NW NE, Section 15-19-10, for 35 bbls. after a 40-quart shot in sand at 2,018-25 feet.

In Waggoner County, H. C. Deems spudded his No. 1 Johnson, NW cor. SW SE, Section 31-18-15.

Okmulgee District

Near Mounds The Petroleum Co. and Mosier are cleaning out to drill deeper in No. 13 Buck CSL SW NE, Section 4-16-13. Prairie Oil & Gas Co. is cleaning out to drill deeper in No. 3 CNL SW SE, Section 4-16-13. Selby Oil Co. is preparing to drill deeper in No. 7 Russell CNL NW SE, Section 4-16-13.

J. M. Pine had a dry hole in No. 1 NW cor. NE, Section 16-13-12, which is a failure at 2,818 feet. Near Morris, Cusack & Charon are drilling at 450 feet in No. 7 NE cor. SE NW, Section 29-13-14.

Seminole County

Clark Edwards has built a rig for No. 1 School Land CNL NE SW, Section 16-10-5. Prairie Oil & Gas Co. has a rig up in north Cromwell for No. 1 SW cor. NE SW, Section 28-11-8. Indian Territory Illuminating Oil Co. has the rig built for No. 1 Carter, SW cor. NE, Section 24-9-6; and No. 1 SW cor. NE, Section 15-8-6 is spudded. Plover Drilling Co's. No. 2 NE cor. SE SE, Section 7-9-8, is drilling at 550 feet. Independent Oil & Gas Co. and Holmes & Jarvis have built a rig for No. 2 Cobb, SW cor. NW, Section 8-9-8. Phillips Petroleum Co's. No. 1 SW cor. NW SW, Section 8-9-8, is completed for 40 bbls. after a shot of 20 quarts in sand 3,288-3,308 feet. Roxana Petroleum Corp. is drilling at 350 feet. Southwestern Petroleum Co. has built the rig for No. 2 NW cor. SE NE, Section 18-9-8. Shaffer Oil & Refining Co. has the rig on the ground for No. 3 SW cor. NE NE, Section 18-9-8. Oklavania Oil Co. has the rig up for No. 1, NE cor. NW SE, Section 18-9-8. Holmes & Jarvis have a dry

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hole in No. 1-A, SE cor. SW, Section 22-9-8 at 4,412 feet.

Dixie Oil Co. has built the rig for No. 1 Logan NW cor. NE SE, Section 25-8-7. W. R. Ramsey has a dry hole in No. 2 SE cor NE SW, Section 19-8-8, at 3,378 feet. Magnolia Petroleum Co. has built the rig for No. 2 Pooker, SE cor. SW, Section 32-8-8.

At Wewoka the Magnolia Petroleum Co. has built the rig for No. 4 Davis, NW cor. NE NE, Section 6-7-8.

Hughes County

Foster Investment Co. and the Independent Oil & Gas Co's. No. 1, NW cor. SE, Section 26-9-9, is dry and abandoned at 3,485 feet. Independent Oil & Gas Co. and Transcontinental Oil Co's. No. 7, SW cor. SW, Section 26-9-9, had sand 3,358-91 feet and the well made 250 bbls. natural. Waite Phillips Co. has a dry hole in No. 1 NW cor. NW, Section 35-9-9, which is abandoned at 3,444 feet.

Lincoln County

T. B. Slick has built a rig over an old hole No. 1 Norton, SW cor. NE, Section 7-14-4. Old total depth was 3,310 feet. H. F. Wilcox Oil & Gas Co. has built a rig to test shallow sand in No. 2 Saunders, CNL NW NW SE, Section 5-12-3. The same company has also completed a rig for its No. 3 Sac & Fox, C NE NW NW, Section 22-14-6.

In the Davenport Pool, the Magnolia Petroleum Co's. No. 2, C SE NW SE, Section 34-15-5, was completed for 125 bbls. natural from sand at 3,390-3,432 feet. Gravity is 46.2 degrees. The same company has a rig built for No. 4, Smith (B), C SW NE SE, same section. Its No. 6, C NE SE SE, same section, was shot with 25 quarts and responded with 93 bbls. of 47.2 gravity oil afterward from sand at 3,414-31 feet. Total depth was 3,442 feet and initial natural production 80 bbls.

The Prairie Oil & Gas Co. completed a 430-bbl. well after a shot of 30 quarts in its No. 3, C NE NE SW, Section 35-15-5. Sands were found at 3,325-29 feet and 3,340-70 feet with total depth 3,385 feet. In the same section, the Pure Oil Co's. No. 6, C NW SW SW, was shot with 10 quarts and made 280 bbls. of 46.9 gravity crude from sand at 3,374-3,404 feet, with total depth 3,420 feet. Initial natural output was 255 bbls.

The Mid-Continent Petroleum Corp. was rigging up its No. 5 Earp, SW cor. NW, Section 8-15-6.

The Carter Oil Co's. No. 6, C SE NE NE, Section 2-14-5, was good for only 58 bbls. natural from sands at 3,371-3,400 and 3,405-15 feet with total depth 5 feet deeper, but was completed without a shot. The same concern's No. 7, C NW NE NE, same section, made 72 bbls. natural from sands at 3,333,35 and 3,346-3,407 feet.

The Skelly Oil Co's. No. 7, C SE SE NE, same section, which was a 115-bbl. natural well at 3,381-3,405 feet, was shot with 30 quarts and increased to 180 bbls. The Texas Co. spudded its No. 2, C SW SE SE, same section, and the Twin State Oil Co. set 100 feet of surface casing in its No. 9, C NE NW, same section.

The Texas Co's. No. 2, C SE NE SE, Section 4-14-5, topped sand at 3,455 feet, found first oil at 3,468 feet and shut down at 3,470 feet after making a flow of 20 bbls.

Oklahoma County

Maxine Oil Co. has lost the hole in its wildcat No. 1 NW cor. SE SW, Section 9-14-1w, at a depth of 2,035 feet. A twin well will be drilled.

The Roxana Petroleum Corp. has taken over the test of R. W. Talbot No. 1 Jackson, NW cor. SE NW, Section 13-13-1w.

Grady County

John Schwartzfisher and others are drilling at 450 feet in No. 1 CNL NE SW SW, Section 2-8-8w. Public Utilities Co. has a dry hole at 3,008 feet in No. 1, NW cor. SE SE, Section 12-6-7w. Stogner and others have a rig on the ground for No. 2 Chandler, SE cor. NE NW, Section 23-5-6w. Badget & Hughes have cemented the surface casing in No. 1, SW cor. NE SW, Section 10-5-7w. English Jacobs has rigged up rotary for No. 3 Williams, NW cor. SE SE, Section 31-6-9w.

In the south end of the county the Garvin Drilling Co. has moved in a rig for No. 1 Dutton, SW cor NW, Section 5-3-5w. Sinclair Oil & Gas Co. and others have set the surface casing in No. 1, SE cor. NW, Section 5-3-5w. Garvin Drilling Co. and others have completed No. 2 CNL NE SE SW, Section 35-3-5w. Sand was 1,501-11 feet and the well is pumping 50 bbls. daily. The Prairie Oil & Gas Co's. No. 1 NW cor. NE NE, Section 3-4-8w, had broken sand 2,033-2,350 feet with water in the bottom. The well is making 20,000,000 feet of gas and an attempt is being made to shut off the water. Briscoe & Hall have a dry hole in No. 1, C SE SE, Section 23-4-8w, at 3,350 feet, and the location for No. 1 C SE SE, Section 26-4-8w, is abandoned. Clark & Cowden have rigged up a rotary for No. 1 Shorttes, NE cor. NE, Section 11-3-8w.

In northwestern Carter County, the Simpson-Fell Oil Co. was drilling at 651 feet in its No. 1, C SE SW NW, Section 34-1s-3w.

The Twin State Oil Co's. No. 1 Howard, C SE SW SW, Section 15-2s-3w, was drilling at 50 feet. Wirt Franklin was swabbing 125 bbls. from his No. 4, CNL SE NE, Section 22-2s-3w, from broken sand at 2,652,2,908 feet. The Humble Oil & Refining Co's. No. 7 CSL NE NE, same section, was good for 125 bbls. estimated from sand at 2,450-84 feet and had broken sand from 2,989 to 3,001 feet. The Magnolia Petroleum Co. was building a rig for No. 10 Lahman, C SW NE SE, Section 23-2s-3w.

A 60-bbl. pumper was completed by the Sturm Drilling Co. in its No. 1, SE cor. NE NE, Section 32-2s-3w, from sand at 2,280-2,310 feet, total depth being 2,312 feet. Gravity of the crude tested 36.5 degrees.

Merrick and others were rigging up a rotary for their No. 1 Nichols, C SW NE NE, Section 8-3s-2w.

Stephens County

The Carter Oil Co. and Knox Petroleum Co. are drilling at 350 feet in No. 2, NW cor. SE, Section 2-2-5w; and No. 6, NE cor. NW, Section 2-2-5w, is drilling at 250 feet. Day Oil Co. has a failure in No. 1, C SW NE, Section 10-2-9w, at 3,018 feet. Westheimer & Daube have completed No. 1, NE cor. NW SE, Section 30-2-9w. Sand was 2,090-92 feet and the well is swabbing 50 bbls. P. L. Meade and others have a dry hole at 2,500 feet in No. 1, SE cor. NW, Section 34-1-9w.

A duster was completed by Winkler and others in the C NW NW NW of Section 18-2s-7w. It was their No. 1 and was dry and abandoned at 2,271 feet.

In the extreme western part of the county, Gant and others lost the hole at 2,480 feet in their No. 1 Staitman, SE cor. Section 35-1s-9w, and had a rotary rig up for a twin well to it, which will be known as No. 1-A. The same interests completed their No. 2 Staitman, NW cor. NE, Section 36-1s-9w, for 22,500,000 feet of gas at 2,028-34 feet, rock pressure being 590 pounds.

The Lone Star Gas Co. abandoned its No. 1, NE cor. SW NE, Section 18-3s-4w, an old well drilled deeper, as dry at 1,904 feet.

In Comanche County, east of Lawton, the Magnolia Petroleum Co's. No. 1, C NE NE NE, Section 36-2-10w, pumped 119 bbls. the first 24 hours from sand at 1,638-42 feet. Gravity of the oil was 36.5 degrees. Ashcraft and others were drilling their No. 1, SE cor. Section 20-2-10w.

In southern Jefferson County, Couch & Jones had a rotary rig up for their No. 1, SE cor. SW, Section 28-6s-5w. Simpson-Fell and others were drilling at 1,017 feet in their No. 1, C NE NW NE, Section 31-6s-5w, and in Section 33 of the same township the Carter Oil Co. had a rotary rig up for No. 2 Seay, CSL NE NE, and was drilling at 400 feet in No. 3 Seay, CWL NW NE.

Culbert & Lyle abandoned their No. 1, NW cor. SE SW, Section 3-7s-6w, as dry at 1,805 feet.

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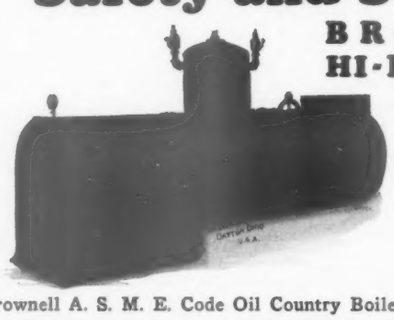

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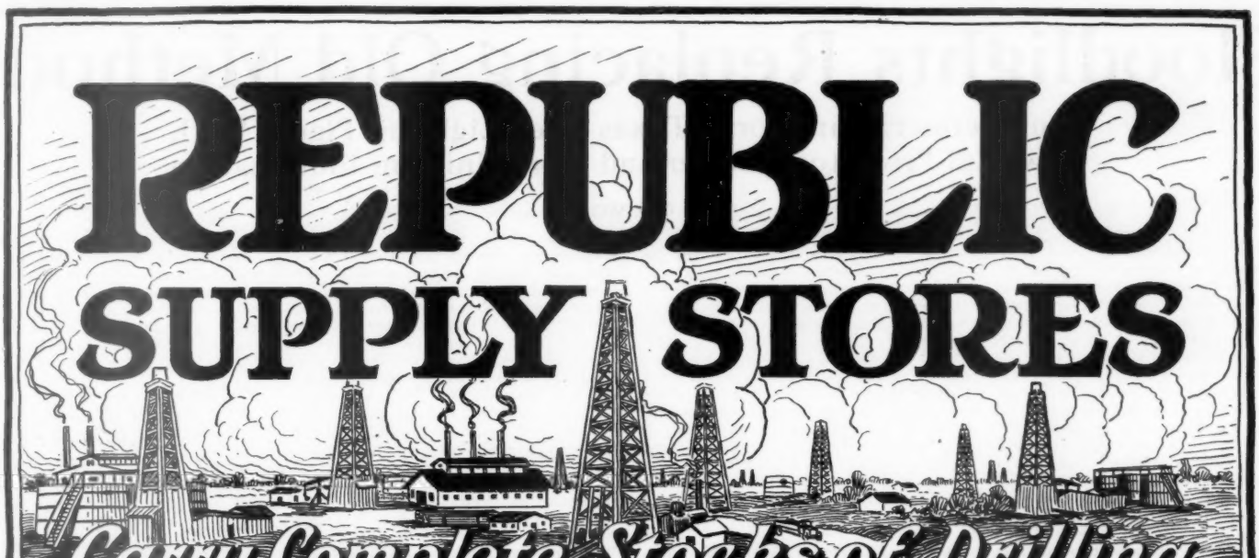

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Floodlights Replacing Old Methods

Four Refineries in North Texas Area Lighting Plants With Powerful Projectors. Better and More Uniform Illumination

By C. O. Willson

WICHITA FALLS, Tex., Mar. 20.—Floodlighting for plants is receiving the attention of the refining fraternity in the North Texas area, probably more than any other section of the Mid-Continent Field. Four of the largest refineries have already made installations, while the operators of the remaining plants are closely watching the results with the view of changing their own equipment.

Visitors in this section ever since the opening of the Burkburnett Field in 1918 have been familiar with the night scene in the refinery section of this city when they are going to or coming from the Electra, Burkburnett and other fields of Wichita County. Myriads of small lights literally cover the equipment of the several refineries and the railroad yards which adjoin. From a distance the scene has been likened to thousands of stars. Less elegant but equally as expressive was the statement of a refinery worked who

Fig. 2—Night scene at the Panhandle refinery.

in contrasting the old and new lighting methods referred to the former as a "bunch of lightning bugs."

The visitor to that section of the city now is immedately struck with the changes which are under way or completed at three of the refineries. Instead of the innumerable small dots of light the plant equipment and yards are being swept with a light from two or more projectors located on top of a tower or some other high point in the plant. If the previous reference to the stars is to be accepted as descriptive of the old type of lighting, then by way of contrast it would probably be best to refer to the new scheme as the "brighter and uniform light of a full moon."

Speeds Work

Probably in no other industry will improvement in lighting methods be more welcome than in the refining of petroleum products. Due to the fact that operations must be continuous throughout the 24 hours of the day and also because control of operations is largely outdoors regardless of weather conditions, night lighting is an important factor in all refineries. So far as operations are concerned, the night shift of a refinery generally runs as much crude to stills as the day force. It is not unusual to find the operating force as busy at 2 a. m. as at 2 p. m.

However, it is also true that at many plants work which should be done at night is postponed until morning due to the fact that lighting facilities are not adequate. It has also been pointed out that in construction work speed is important and savings would often accrue to the refiner if this work could be carried on during the night, the same as the operations.

It is not necessary to explain here how refiners in the past have handled their lighting problems. These methods are still in use at 90 per cent of the refineries for it is only during the past year or two that a few operators have directed their attention to solving what was thought to be an unsatisfactory condition which could not be materially improved.

In general, it is customary to place lights usually not exceeding 100 watts wherever deemed necessary for the operation of the plant. These lights will be found in front of the stills, on top of the run down and storage tanks, scattered around the condenser boxes, towers, agitators, heat exchangers stairways, loading racks and pumps and valves located outdoors.

Old Methods Unsatisfactory

This equipment lights up a small area but a few feet away from each light. If the operator gets outside this area he generally must have recourse to some type of flashlight. Although it is contrary to the most important rules of all refineries, instances can be cited where the inexperienced or careless employe has used a match to solve the problem of light. Both he and his employer usually suffer when this is done.

The extensive wiring all over the plant also constitutes a hazard, a fact recognized by the insurance inspector who carefully watches these installations and often requires changes. Exposed to atmospheric conditions maintenance costs are high in many refining centers. Light bulbs are easily broken and are constantly being replaced.

Development of Floodlights

From this situation has gradually developed the floodlighting system. It was first tried out by using a more powerful light with a projector covering a small area of the plant. This has generally proved more satisfactory than the former method both from the standpoint of light and operating costs.

From this developed the idea of having still more powerful lights elevated so as to cover the entire plant. The practical possibilities of this method has been apparent in the floodlighting schemes used to light the exterior of office buildings, sign boards, monuments and other ornamental uses. This method of lighting is fast supplanting the former practice of using a large number of bulbs located along the face of the object to be illuminated. In the new method the lights are focused on the object from a distance, the source of the light generally being concealed.

Exactly the same principle is involved in the lighting system which has been adopted by local refineries. The Panhandle Refining Co., the oldest and one of the largest refineries in North Texas, was the first company to install the new lights late last year. A description will illustrate the method which has since been adopted by the Texhoma Oil & Refining Co. and the American Refining Co. at their local plants, and the Waggoner Refining Co. at its Electra refinery.

At all 4 refineries the Pyle-O-Lite "Nonglare" 23-inch floodlight projector is used. This equipment has been designed for use under conditions similar to that existing at refineries. The projectors have aluminum cases for protection against corrosion due to exposure to the fumes of a refinery or atmospheric conditions. The projectors are of one type although they are made with both a plain cover glass and rectangular divergence with two types of lamp bulbs depending on the use.

Panhandle Installation

At the Panhandle refinery two of these projectors, of 1,000 watts each are located at one end of the plant near the top of the Dubbs tower. Those familiar with the Dubbs cracking equipment will recall that the dephlegmator is about 75 to 100 feet from the ground. The two projectors at the Panhandle refinery are 85 feet from the ground.

Each of these project light at an angle of 43½ degrees. At a distance of 700 feet this means a beam of 600 feet in width. These two lights are focused so that they cover the main plant including the power house, distillation equipment, agitators and all essential run down and storage tanks. At the other end of the refinery a third projector (Figure 1) on a specially constructed 66-foot tower projects light at an angle of 90 degrees to the beams of the other projectors. This arrangement does away with practically all shadows, the third projector eliminating the shadows from the other two projectors and vice versa.

The third projector also lights the loading rack so that flash lights are not needed in loading. On the loading rack formerly, the company had 30 50-watt lights. These three 1,000-watt lights have replaced smaller lights totaling 7,225 watts for the entire plant. This has meant a substantial reduction in the company's light bill both for electricity and maintenance of equipment.

Fig. 1—Tower and one of the projectors at the plant of the Panhandle Refining Co., Wichita Falls, Tex.

However, W. F. Sims, manager of the refinery, in discussing the change in the lighting system did not stress the economy of the new method so much as the better lights. He said that the new equipment gave "75 per cent more light" than the old. As previously explained, the lights when properly installed and focused is uniform and covers all parts of the plants. Tanks are readily gauged several hundred feet from the lights and meters and other control instruments are easily read. The accompanying view (Figure

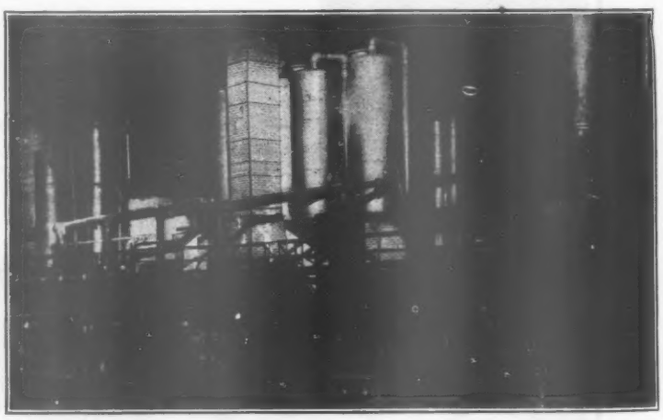
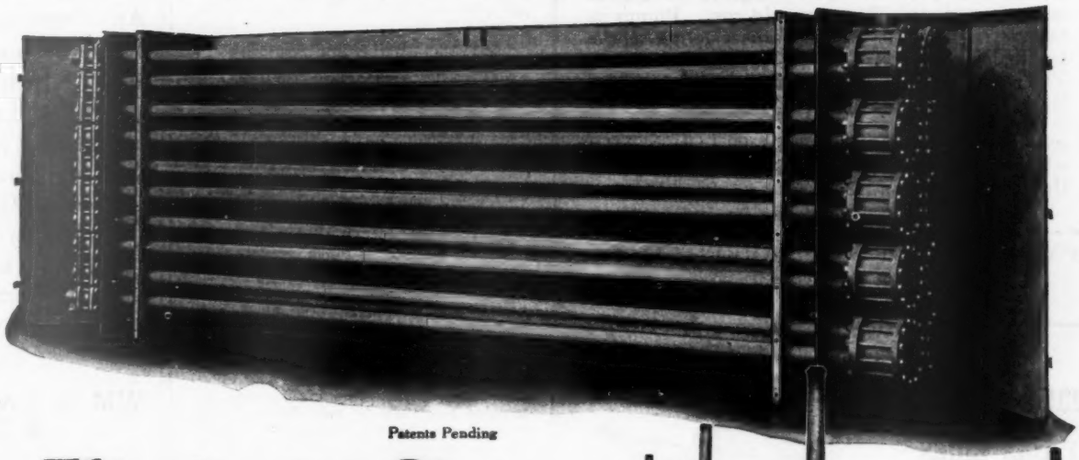


Fig. 3—Night scene at the Electra, Tex., refinery of the Waggoner Refining Co.

(Continued on Page 150)

No Stuffing Boxes



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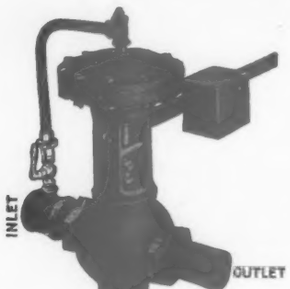

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RULES FOR PLUGGING WELLS IN MONTANA

Rules for the plugging of oil wells in Kevin-Sunburst Field have been made by the Montana State Board of Railroad Commissioners at Helena, acting upon the advice and suggestion of the Montana Chapter of the Rocky Mountain Oil and Gas Association. The law provides for a fine of $500 for the first conviction of violation and a fine of $1,000 or six months in jail, or both, for a second.

The rules for plugging wells, follow:

1. That during the drilling or operation of any oil or gas well, any oil or gas producing stratum or horizon or oil and gas bearing stratum or horizon shall be effectively and completely shut off from any water above or below by proper casing or by some other equally effective method to preclude water entering.

2. It shall be the duty of any operator or other person, having control of an oil or gas well, before abandoning any well or dry hole, to plug and seal off any oil or gas producing or bearing stratum or horizon, so as to effectively prevent water from entering the same, or oil, gas or water from escaping.

Method of Plugging

3. That before pulling the casing from any well, or abandoning any well, the bottom of the hole shall be filled with cement, or other equally effective plugging material, approved by proper plugging methods, or approved by a representative of the Board of Railroad Commissioners of the State of Montana, to a point less than 10 feet above the oil or gas producing or bearing stratum or horizon, which shall be well tamped if of material other than cement. At this point a well-seasoned wooden plug, not less than four feet long and having a diameter not less than one-half inch smaller than the hole, shall be rammed solid into the hole and material placed therein. There shall be placed on top of this plug not less than 20 feet of cement or some other material equally effective in plugging. A well-seasoned wooden plug of like dimensions as above shall be placed in the hole at this point and rammed solidly into the same on top of the material last placed. Should the oil or gas producing or bearing strata or horizons be close together, the quantity of material used in plugging may be lessened or increased so that the wooden plug at all times will be placed below or above the oil or gas producing or bearing strata or horizons.

4. Each and every oil or gas bearing stratum or horizon above the one plugged as hereinbefore provided, shall be plugged in a like manner, so as to effectively and completely shut off the water from entering the same from above or below and to prevent the escape of any oil, gas or water from such oil or gas bearing stratum or horizon.

Plugging Bottom Water

5. Where the hole is considerably deeper than the producing or bearing stratum or horizon that is required to be plugged and sealed off, as provided in paragraph 2 above, the same may be bridged at a point 10 feet below such stratum or horizon, or filled with mud, sand or gravel to a point 10 feet below such producing stratum or horizon; at which point a well-seasoned wooden plug, not less than four feet long and having a diameter not less than one-half inch smaller than the hole, shall be placed. From this point the well shall be plugged as provided in paragraph 3 above.

6. Within fifteen days after the plugging and abandoning of any oil or gas well, or dry hole, and affidavit shall be filed with the Board of Railroad Commissioners of the State of Montana, made by the superintendent or foreman having in charge such work and one other person present during the plugging, which shall specifically set out the location of the well, the name of the operator or the person in control, the depth and thickness of all oil or gas production or bearing strata or horizons, the material used in plugging and sealing the different strata or horizons, the depth of the different plugs set, the date of the plugging, and that such well or dry hole was plugged and abandoned.

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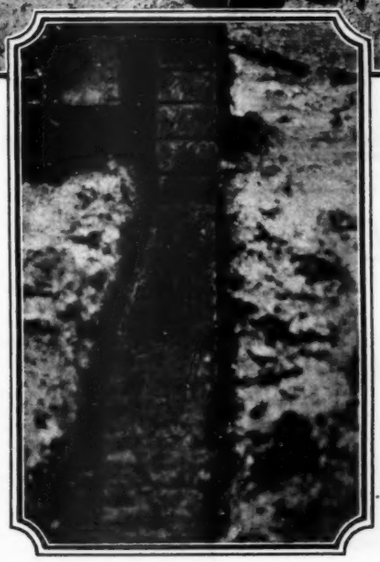

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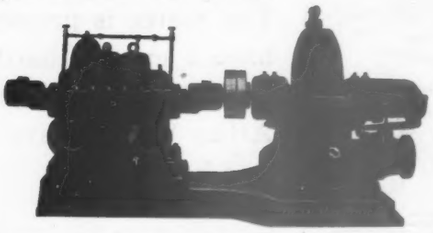

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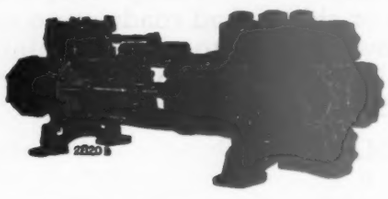

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FLOODLIGHTS REPLACING THE OLD METHODS

(Continued from Page 146)

2) gives a night view of the Panhandle plant.

Electra Plant

The Electra plant of the Waggoner Refining Co. is the only other refinery where the installation is complete. (Figure 3). At this plant all the projectors are placed on one tower located to the front of the plant. The tower used is an ordinary windmill derrick, the projector or platform being 60 feet from the ground. These four lights are focused so that they cover the entire plant at an angle of about 180 degrees. At this plant the night watchman was especially enthusiastic regarding the new lighting method, which apparently simplified his labors in regularly inspecting the plant equipment.

At the Texhoma refinery five of the projectors have been installed on the Dubbs towers lighting up the yard to the rear and sides of the pressure stills. At the American refinery, units have also been installed on the Dubbs stills. A tower was also built of welded pipe and one of the projectors has been installed there to eliminate shadows. The company whose plant covers a greater ara than any other refinery in this section expects to be able to adequately light its equipment with 15 of the lights.

It is apparent that before changing their present lighting system, the operators should make a careful survey of their lighting needs. No standardized method of installation is available for the very good reason that no two refineries are alike in design and size. Engineering data, however, are available from the manufacturers, covering the different type of lamp bulbs, lens and necessary adjustments in projectors and focusing.

CARDINAL PETROLEUM PLANNING EXPANSION

SHREVEPORT, La., Mar. 20.—Plans for the building of the Cardinal Petroleum Co., into a large independent producing company were announced last week when James E. Stock, well-known El Dorado operator, sold his south Arkansas property to the Cardinal Co., and was elected president of the company.

Stock's interest sold for approximately $200,000 including 400 acres of leases on which 17 wells are making approximately 400 bbls of oil daily, according to announcements made last week. Stock drilled the first well in Salt Creek, Wyo.

The company has a small amount of scattered production and is preparing to purchase production property in Arkansas to bring the company's daily production up to 10,000 bbls. The Cardinal company will have headquarters in New York and will maintain branch offices in El Dorado and New Orleans.

A. P. I. CONVENTION MEETS NEXT JANUARY

William R. Boyd, Jr., assistant secretary and counsel for the American Petroleum Institute, was in Tulsa recently making preliminary plans for the next Institute convention, which will be held in the latter half of January, 1927, in Tulsa, on dates to be announced later. Mr. Boyd returned to New York last Thursday.

ALBERTA PIPE LINE BILL

CHATHAM, Ont., Mar. 20.—Amendments to the common carrier pipe line bill passed at the last session of the Alberta legislature are expected to be brought in shortly by Alex Ross, minister of public works. They will embody the principles of compelling equitable purchase of gas and oil of similar kinds from wells in the same field, to conserve the production by drawing evenly from all wells. The Government will also ask that the Alberta Public Utilities commission be empowered to administer the pipe line regulations.

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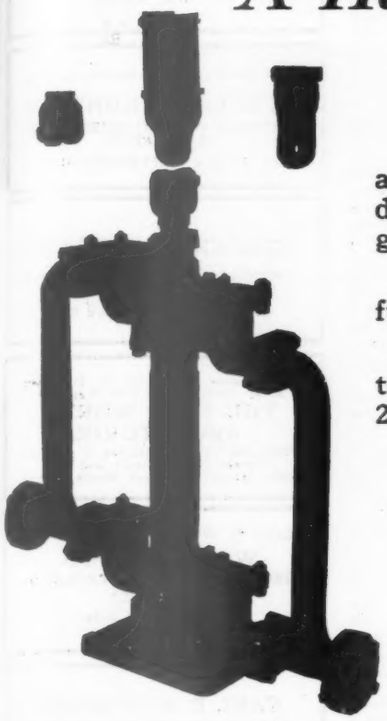

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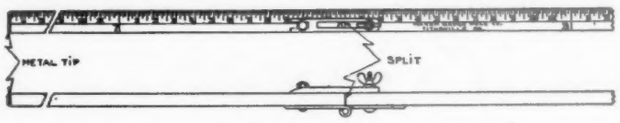

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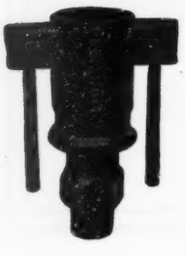

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Oil Electric Power Used in Peru For Hill Top Drilling

Towering high above the surf-lashed shore of northern Peru is the rocky and barren table land—Tablazo Restin—of the most westerly point of the South American continent. Although the rocky formation goes by the name of plateau, it is criss-crossed with so many canon-like ravines that the designation of table land seems justified only by the approximately equal altitude of its many peaks. Few of them actually seem flat enough to permit balancing a foot-stool on them.

Making a steep ascent from the sparsely sanded seashore the traveler reaches the fairly uniform top level of the plateau peak situated at 800 feet above sea level after traveling landward for a distance of only half a mile. The mean grade along which he climbs exceeds 30 per cent and although this figure might not impress the mountain climber, it might give pause to the oil well driller, says Oil Engine Power.

The Lobitos Co. did in fact succeed in hauling one 40-horsepower boiler up the peaks to the point where a well was to be drilled, but the job was so troublesome and costly that it threatened failure.

Roughly grading a sort of passage through the rock formation permitted a narrow-gauge track to be laid and afforded all the assistance to transportation possible to obtain under the circumstances. Every piece of equipment had to be laboriously hauled foot by foot, long periods of time being required for shipping some of the heavier items. By far the largest one of these was of course the boiler; had it been necessary to haul one of these for each one of the widely separated holes, it is safe to say that not many would ever have been drilled.

But the final deposition of the boiler in the place intended for it by no means ended traffic difficulties. Every drop of water for boiler feeding had to be carried and the possibility of condensing any of the exhaust steam was naturally ruled out. Fuel for the boiler, being of course equally unobtainable on the rocky mountain wastes, further added to the already heavy strain on the system of mountain transportation.

A project was considered for pumping sea water to be used as boiler feed. An estimate showed that to pump this water against the enormous static and frictional head would alone have required 240 bbls. of fuel oil burnt per month under boilers located at sea level pumping plants while another 240 bbls. would have been required by the boilers used at the wells for drilling purposes. With a debit of about 16 bbls. of fuel oil per day to start with, it is questionable whether anyone would have wanted to take on the risk of striking dry holes in addition.

Transporting Power

The decision to use oil engines followed. They were installed at sea level to drive electric generators furnishing current wherever needed—to the cars on the narrow-gauge trucks, to the wells being drilled, bailed or pumped. Instead of transporting power machinery and its supplies up the steep rocky slopes, the engineers sent the power itself.

Four of the Petter surface-ignition oil engines comprising the plant are rated at 200 b.h.p. each while a smaller unit of 140 horsepower is belted to a generator of corresponding size. Allowing the usual overload margin, the total rating of the plan would be abolt 1,000 horsepower, of 650 kilowatts. It is considered sufficient for the complete requirements of six wells including the power for drilling, pumping, pulling casing, shop power, lighting and incidentals. All of this is accomplished on a fuel oil consumption of about 310 bbls. per month.

With ample power conveniently available along the hauling trail, drilling equipment consisting of cable tools, derrick parts, pumps and the like was quickly located at the drilling sites, whereas the necessity for hauling power machinery was formerly one of the major obstacles to progress, its readiness to furnish power was now converted into an invaluable asset. The oil field situ-

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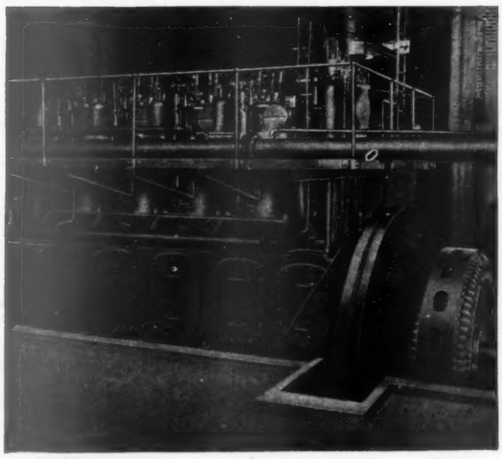

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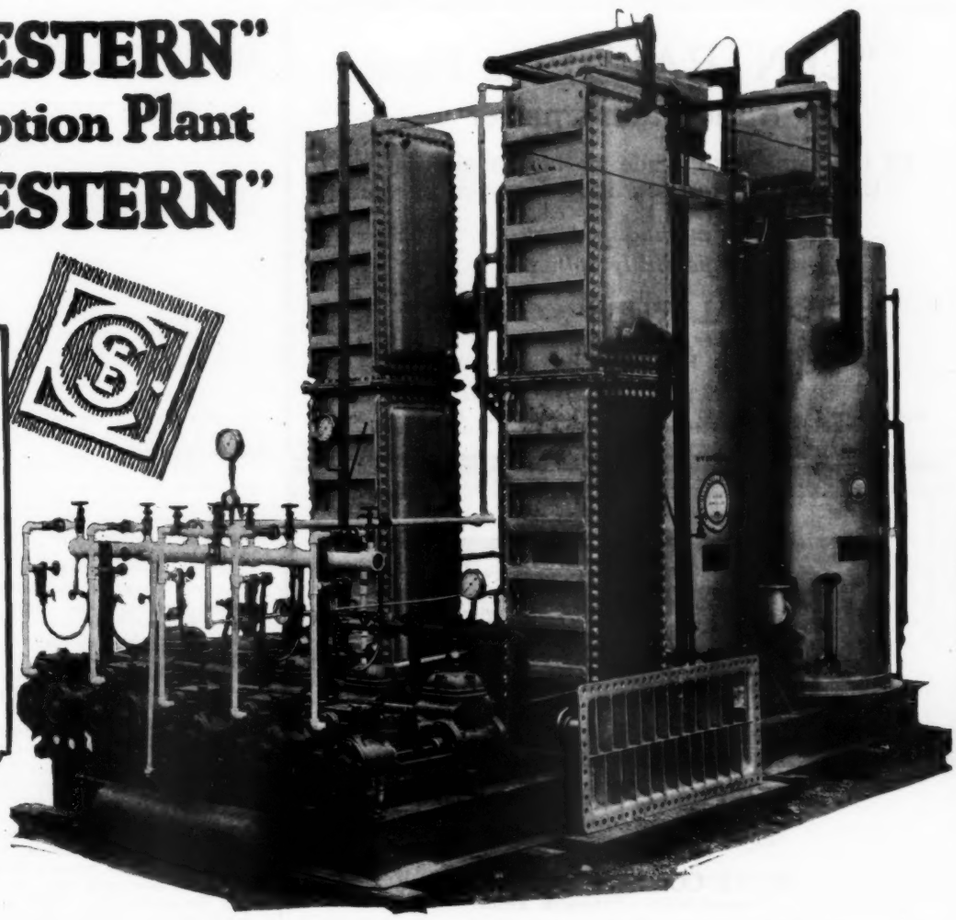

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Perkins-MacIntosh have supplied most of the drilling equipment, which is used in a manner quite similar to that employed with cable tools in the United States. The major difference consists in working the drill bits, etc., up and down by means of so-called Canadian Galician rods instead of the wire rope. Every time the depth is increased by a "screw's length," about six or eight feet, the bit is withdrawn from the hole in order to allow the spoil to be removed. This is done by means of a "bailer," a tubular affair with a foot valve in the bottom of it. A certain amount of water present in the hole converts the spoil into a semi-fluid mud which can enter but not escape from the bailer as it is jerked up and down. As soon as the latter is full it is lifted to the surface and emptied.

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The use of this antiquated bailing equipment is credited with making the power house ammeters swing between 10 and 70 amperes, not without causing the oil engines to set up very justifiable protest. On one occasion the bailing operation was practically stalled while the motor controller was jammed hard over by the operator. Such occurrences as these naturally make themselves plainly apparent on the main switchboard and expose the oil engines to a certain amount of criticism which of late has been more usefully directed at the blundering drilling methods which deserve it.

Very considerable improvement was effected by the use of chain-driven sand reels equipped with a modern multiple-disc clutch. This equipment is substantially built along engineering lines and draws power from the band wheel at least approximately in proportion to the momentary requirements of the bailing process. Eight or more of these units have been purchased from the Parkersburg Rig & Reel Co. Owing to the fact that this type of reel is about 40 per cent

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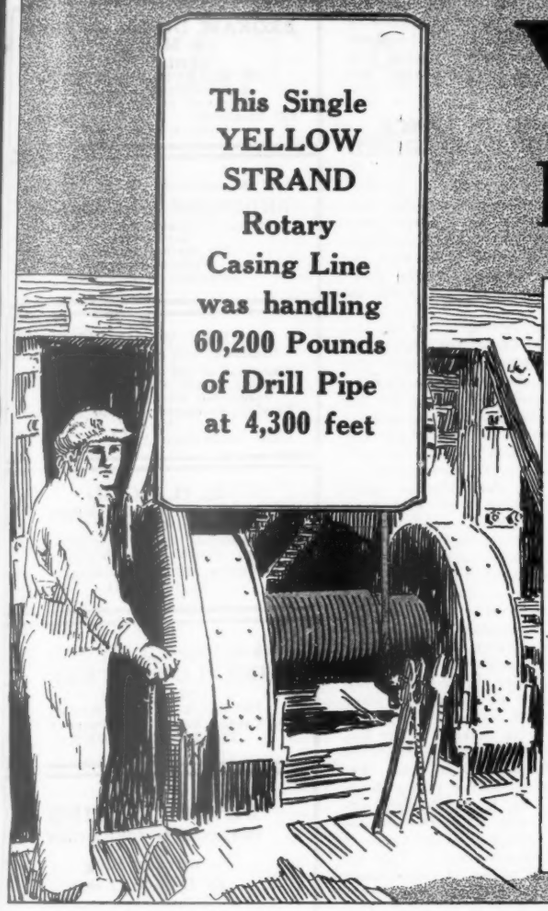

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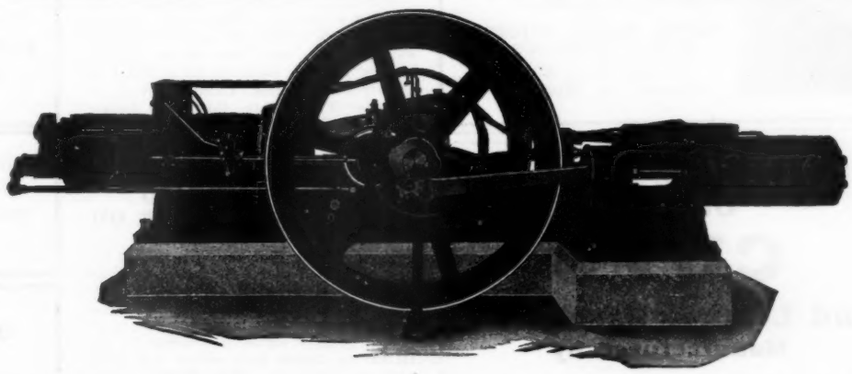

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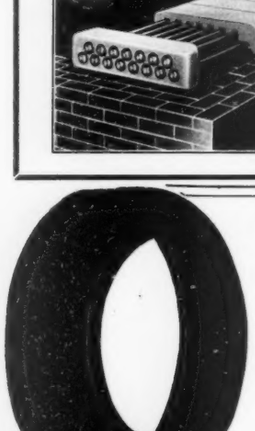

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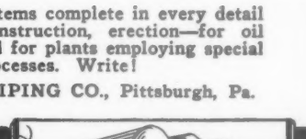

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more efficient than the antiquated form and that it imposes none of the excessive load peaks referred to, the oil-engined generating sets are being spared the worst of the abuse to which they had been subjected.

LAKOTA SAND IN LANCE CREEK FIELD DESCRIBED

The development of prolific oil production in the Lakota sands of the Salt Creek Field in Wyoming and the presence of oil in the same sands at Mule Creek northeast of Lance Creek have interested several operators in the prospective drilling of deep test wells at Lance Creek.

A detailed engineering study of the Lance Creek Field by United States Bureau of Mines engineers has shown the presence of the Lakota sands underlying the present productive horizons of the Dakota group. Considerable data and information bearing on the subsurface conditions within the field were collected in working out the report. Correlation of the formations in the different wells shows that the Lakota sands have been reached in 13 wells, most of which were either not properly tested or were not ideally located on the structure. One of these wells penetrated three sands of the Lakota formation on top of the structure and a 35,000,000-foot flow of gas was secured. Two other wells located lower structurally found shows of oil in the Lakota which might have been developed into commercial production had the casing been set at the proper place and a water shutoff secured.

The situation with respect to the Lakota sand at Lance Creek is outlined in a Bureau of Mines report entitled "Petroleum Engineering in the Lance Creek Field," prepared by K. B. Nowels, petroleum engineer, and E. J. Dewees, assistant engineer, attached to the bureau's field office at Laramie, Wyo. This report deals with all phases of development and production in the field and makes recommendations relative to eliminating the water trouble which exists.

Through a cooperative arrangement between the Bureau of Mines and the University of Wyoming, the early availability of the report has been made possible. Copies may be obtained from the University of Wyoming, Laramie, Wyo., at a price of 75 cents, this price having been made necessary because of the cost of the large number of illustrations accompanying the report.

VACUUM IS REPORTED BUYING RUSSIAN OIL

Paris reports that the Vacuum Oil Co. has concluded the first large purchase of Soviet Russian Oil, through Lomoff, head of the Naphtha Syndicate, buying 800,000 tons of Russian crude. It is reported to have signed a contract to buy 60,000 to 70,000 tons which will probably be increased. The Soviet agreed not to compete in Egypt where most of the oil is to be marketed. The Standard Oil Co. of New York also reported negotiating and may conclude arrangements soon.

Vacuum Oil, it is stated, may reach an agreement with the Soviet for partial restoration of its six refineries in Russia and possibly an agreement to develop the new Emba fields in Russia.

WYOMING ROYALTIES UP

CHEYENNE, Wyo., Mar. 20.—Oil production values in Wyoming are on the increase, advices, received by the United States land office in the form of royalty checks reveal. A royalty of $30,000 from the Ohio Oil Co., operating in the Salt Creek and Rock River fields, for February trebles the royalties of previous months in the past six months. A total of $528,477, of which the Sinclair Crude Oil Purchasing Co. contributed $494,945, was received for February's operations. The Sinclair company is the marketing agency for Federal Government oil. Officials of the land office consider the Ohio royalty increase unusual, as the winter season generally is a slack period.

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Chicago Pneumatic Tool Co.

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Oil Well Supply Co.
Reading Steel Casting Co.
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United Iron Works, Inc.

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Metric Metal Works.

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Forgings—
Champion Machine & Forging Co.
Milwaukee Forge & Machine Co.

Friction Clutch Pulleys (See Pulleys)—

Fuel Oil (See Oil—Fuel)—

G

Gas and Oil Gate Valves (See Valves)—

Gas Compressors (See Compressors—Gas)—

Gas Engines (See Engines—Gas)

Gas Holders—
Chicago Bridge & Iron Works.

Gaskets—
Garlock Packing Co.
McCord Radiator & Mfg. Co.

Gaskets—Fibre—
Durabla Mfg. Co.

Gas Masks & Safety Appliances—
Mine Safety Appliance Co.

Gas Meters (See Meters)—

Gas Oil (See Oil—Gas)—

Gasoline—
Berry's James B. Sons Co.
Crown Central Petroleum Co.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.

Gasoline—Natural—
Chestnut & Smith Corp.
Warren Petroleum Co.

Gasoline Plant Equipment—
Bessemer Gas Engine Co.
Clark Brothers Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Widdell Engineering Co.

Gas Regulator Casinghead—
Davis Regulator Co.

Gas Regulators—
Chaplin Fulton Mfg. Co.
Davis Regulator Co.
Fisher Governor Co.
Metric Metal Works.
Smith Separator Co.

Gas Scrubbers—
Newton Process Mfg. Co.

Gauge Glass—High Pressure—
Durabla Mfg. Co.

Gauge Poles—
Marsh Gauge Pole Co.

Gauges—Pressure and Vacuum—
Bristol Co.
Metric Metal Works.

Gauges—Test—
Metric Metal Works.

Gear Driven Pumps (See Pumps)

Gears—Cut—
Nuttall, R. D., & Co.

Gears—Reduction—
Emsco Derrick & Equipment Co.
Nuttall, R. D., & Co.

Gears—Reverse—
Emsco Derrick & Equipment Co.

Generators—
Westinghouse Electric & Mfg. Co.

Generators—Acetylene—
Oxweld Acetylene Co.

Generators—Steam—
Baker Motors, Inc.

Generators—Turbine—
Moon Manufacturing Co.
Pyle-National Co.
Westinghouse Electric & Mfg. Co.

Glass Bottles (See Bottles, Glass)

Glassware—Chemical for Laboratory Use—
Illinois Glass Co.

Governors—
Gardner Governor Co.

Governors—Boiler Feed—
Chaplin-Fulton Mfg. Co.
Fisher Governor Co.

Grey Iron Castings (See Castings)

H

Hammers—Chipping and Calking Pneumatic—
Chicago-Pneumatic Tool Co.

Hammers—Riveting Pneumatic—
Chicago Pneumatic Tool Co.

Hangers—Iron and Steel—
Dodge Mfg. Corp.

Hatches—Gauge and Thief—
Oil Conservation Engineering Co.

Heat Exchangers—
Carbondale Machine Co.
Griscom-Russell Co.
Hope Engineering & Supply Co.
Newton Process Mfg. Co.
Rose Heater & Mfg. Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.

Heat Interchangers—Fluid—
Braun, C. F., & Co.

High Pressure Gate Valves (See Valves)—

Hoists—Pneumatic, Geared and Universal—
Chicago Pneumatic Tool Co.
Yale & Towne Mfg. Co.

Hoists—Portable—
Wright Mfg. Co.
Yale & Towne Mfg. Co.

Hooks for Rods and Tubing—
Dunn Mfg. Co.

Hose—
Fenwick-Reddaway Mfg. Co.

Hose—Drillers—
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Hose—Oil Suction and Discharge
Goodrich, B. F., Rubber Co.
United States Rubber Co.

Hose—Rubber—
Goodyear Tire & Rubber Co.
United States Rubber Co.

Hot Rolled Strip Steel (See Steel)

Hydraulic Gate Valves (See Valves)—

Hydraulic Jacks (See Jacks)—

Hypochlorite of Lime—
Mathieson Alkali Works, Inc.

I

Insulation Materials—
Celite Products Co.
Johns-Manville, Inc.

Insurance—Fire—
Oil Insurance Association.

Insurance—Tornado—
Oil Insurance Association.

Iron—Ingot—
American Rolling Mill Co.

J

Jacks—Hydraulic—
Bridgeport Machine Co.

Jacks—Lifting—
Templeton, Kenly & Co., Ltd.

Jacks—Pumping—
American Wells Works.
Bessemer Gas Engine Co.
Braden Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Norris, W. C.
Spang & Co.

Jars—
Arbon, Paul, & Co.
Bridgeport Machine Co.
Spang & Co.

Jar Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

K

Kerosene—
Acme Petroleum Co.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Skelly Oil Co.

L

Lacquers—
Arco Company, The
Sherwin-Williams Co.

Lanterns—Electric—
Delta Electic Co.

Lead and Mixed Metal Products—
Eagle-Picher Lead Co.

Lead in Oil—
Eagle-Picher Lead Co.
National Lead Co.

Lead Wool and Containers—
Eagle-Picher Lead Co.

Lifting Jacks (See Jacks)—

Lighting Equipment—
Climax Engineering Co.
Pyle National Co.
Westinghouse Electric & Mfg. Co.

Liquid Level Controls (See controllers)—

Litharge—
Eagle-Picher Lead Co.
National Lead Co.

Loaders—Trucks—
Barber-Greene Co.

Long Distance Telephone—
American Telephone & Telegraph Co.

Lubricating Devices—
McCord Radiator & Mfg. Co.

Lubricating Oils (See Oils)—

Lubricators—
Ajax Iron Works.
Lunkenheimer Co.

Lubricators—Force Feed—
Manzel Brothers Co.
McCord Radiator & Mfg. Co.

M

Machine Tools—
Ryerson, Jos. T., & Sons, Inc.

Manifolds—
Reid, Joseph, Gas Engine Co.

Metal Buildings Sectional (All Types (See Buildings)—

Meters—Gas—
Foxboro Co., Inc.
Metric Metal Works.
Pittsburgh Meter Co.
Roots, P. H. & F. M., Co.
Westcott & Geis.

Meters—Gasoline—
Pittsburgh Meter Co.

Meters—Oil—
Pittsburgh Meter Co.

Molded Goods—Rubber—
Goodyear Tire & Rubber Co.

Motor Controlled Apparatus (See Apparatus—Motor Control)—

Motors—Electric—
Fairbanks-Morse & Co.
Westinghouse Electric & Mfg. Co.

Motors—Gasoline (See Engines—Gasoline)—

Motor Trucks (See Trucks—Motor)—

N

Naphtha—
Pure Oil Co.

Natural Gasoline (See Gasoline—Natural)—

Natural Gasoline Plant Equipment
American Tank Co.
Campbell, J. A.
Continental Supply Co.
Cooper, C. & G., Co.
Griscom-Russell Co.
Roots, P. H. & F. M., Co.
Smith Separator Co.
Westcott & Greis.

Nitrogen—
Linde Air Products Co.

O

Oil and Gas Pipe Line Construction—
Hope Engineering & Supply Co.

Oil Burner (See Burners—Oil)—

Oil Engines, Semi-Diesel (See Engines—Semi-Diesel Oil)—

Oil Field Equipment—
Baker Casing Shoe Co.
Bridgeport Machine Co.
Continental Supply Co.
Cunningham Co.
Gaso Pump & Burner Mfg. Co.
International Derrick & Equipment Co.
Iron King Mfg. Co.
Kaw Boiler Works Co.
National Supply Co.
Oil Well Supply Co.
Parkersburg Machine Co.
Parkersburg Rig & Reel Co.
Reed Roller Bit Co.
Regan Forge & Engineering Co.
Reid, Joseph, Gas Engine Co.
Republic Supply Co.
Simplex Equipment Co.
Trumble Gas Trap Co.

Oil Filters —(See Filters—Oil)—

Oil—Fuel—
Acme Petroleum Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pure Oil Co.
Sinclair Refining Co.
The Texas Co.

Oil—Gas—
Acme Petroleum Co.
Crown Central Petroleum Corp.
Gulf Refining Co.
Pure Oil Co.
Sinclair Refining Co.
The Texas Co.

Oil—Lubricating—
Barnsdall Refining Co.
Berry's James B., Sons Co.
Crown Central Petroleum Corp.
Empire Refineries, Inc.
Gulf Refining Co.
Magnolia Petroleum Co.
Pennzoil Co.
Pure Oil Co.
Sinclair Refining Co.
Skelly Oil Co.
The Texas Co.

Oil—Tractor—
Barnsdall Refining Co.
Gulf Refining Co.
Pennzoil Co.
Pure Oil Co.
Skelly Oil Co.

Oiling Devices—
Lunkenheimer Co.

Oil Meters (See Meters)—

Oil Piping Equipment (See Fittings)—

Oil Reclaiming Process—
Barnickel, Wm. S., & Co.
Houston Pump & Supply Co.

Oil Refinery Equipment (See Refinery Equipment)—

Oil Securities (See Securities)—

Oil Suction and Discharge Hose—(See Hose)—

Oil Well Cementing—
Halliburton, Erle P.

Oil Well Screens (See screens)—

Oil Wells Tools—
D & B Pump & Supply Co.
Hinderliter Tool Co.
Reed Roller Bit Co.
Titusville Forge Co.
U. S. Tool Co.

Over Shots—
Reed Roller Bit Co.
Regan Forge & Engineering Co.

Oxygen—
Linde Air Products Co.

P

Packer Release—
Acme Fishing Tool Co.

Packers—
Goodyear Tire & Rubber Co.
Guiberson Corp.
Larkin & Co.
Layne & Bowler Co.
Oil Well Supply Co.
Regan Forge & Engineering Co.
Spang & Co.
United States Rubber Co.

Packing—
Crane Packing Co.
Durabla Mfg. Co.
Garlock Packing Co.
Goodrich, B. F., Rubber Co.
Imperial Belting Co.
Johns-Manville, Inc.

Packing—Metallic—
Crane Packing Co.

Paint Guns—
Binks Spray Equipment Co.

Painting Equipment—Mechanical
Matthews, W. N., Corp.

Paints—
Aluminum Co. of America.
American Asphalt Paint Co.
Arco Company, The
Continental Supply Co.
Cook Paint & Varnish Co.
Dixon, Joseph Crucible Co.
Eagle-Picher Lead Co.
Eclipse Paint & Mfg. Co.
Sherwin-Williams Co.

Pipe—Cast Iron—
American Cast Iron Pipe Co.
Continental Supply Co.
Greenspon's, Jos., Sons Iron & Steel Co.
International Supply Co.
U. S. Cast Iron Pipe & Fdy. Co.

Pipe—Lead Chemical and Antimonial—
Eagle-Picher Lead Co.

Pipe—Steel—
Greenspon's, Jos., Sons Iron & Steel Co.
Jarecki Mfg. Co.
Kellogg, M. W., Co.
Murray Tool & Supply Co.
National Supply Co.
National Tube Co.
Republic Iron & Steel Co.
Ryerson, Jos., T & Sons, Inc.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.

Pipe—Wrought Iron—
Byers, A. M., Co.
Frick-Reid Supply Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Oil Well Supply Co.
Reading Iron Co.
Superior Tube Co.

Pipe and Nipple Threading Machines—
Bignall & Keeler Machine Works.
Cox & Sons Co., The
Landis Machine Co.
Ryerson, Jos. T., & Sons, Inc.
Standard Engineering Co.

Pipe Clamps (See Clamps—Pipe)

Pipe Fittings (See Fittings)—

Pipe Grips—
Larkin & Co.

Pipe Headers—
National Tube Co.
Newton Process Mfg. Co.

Pipe Line Construction Tools—
National Transit Pump & Machine Co.

Pipe Line Ditchers (See Ditchers)

Pipe Line Equipment—
Gaso Pump & Burner Mfg. Co.

Pipe Screwing Machines—
Buckeye Traction Ditcher Co.

Pipe Suspension Device—
Stearns-Roger Mfg. Co.

Pipe Threading Dies (See Dies)—

Pipe Tools—
Armstrong Brothers Tool Co.
Nye Tool & Machine Works.

Piping—Fabricated—
Kelly & Jones Co.
Midwest Piping & Supply Co.

Piping—Hard Rubber—
United States Rubber Co.

Piping—Steel & Iron—
Crane Co.
Greenspon's, Jos., Sons Iron & Steel Co.
Power Piping Co.

Pistons—
Guiberson Corp.
Heppenstall Forge & Knife Co.

Pistons—Expansion—
Wilson Oil Tool Corp.

Pistons—Slush Pump—
Guiberson Corp.

Plain End Pipe Couplings (See Couplings—Plain End Pipe)—

Plugs—Bottom Water—
Guiberson Corp.

Polish Rods (See Rods—Polish)—

Portable Drilling Rigs (See Rigs)

Power Pumps (See Pumps)—

Power Units—Portable (See Engines)—

Pre-Heaters—
Newton Process Mfg. Co.
Ross Heater & Mfg. Co.

Preservatives—Asphalt—
American Asphalt Paint Co.

Pulleys—Wood, Iron and Steel—
Dodge Mfg. Co.

Pulling Machines—
Iron King Mfg. Co.
National Supply Co.
Safety Pulling Machine Co.

Pumpers—Long Stroke—
Farley Machine Co.

Pumping and Pulling Motors—Electric—
Westinghouse Electric & Mfg. Co.

Pumping Equipment—
American Well Works.
Axleson Machine Co.
Bryson Jackson Pump Mfg. Co., Inc.
D & B Pump & Supply Co.
Farley Machine Co.
Goulds Mfg. Co.
Jones, S. M., Co.
Myers, F. E., Bros. & Co.
Northrup Equipment Co.
Oil Well Supply Co.
Prescott Co.
Ratigan, J. P., Co.
Waukesha Motor Co.

Pumping Gear Units—
Nuttall, R. D., & Co.

Pumping Jacks (See Jacks)—

Pumping Powers—
Aldrich Pump Co.
Bessemer Gas Engine Co.
Buda Co.
Climax Engineering Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
Kansas City Hay Press Co.
Marion Mch., Fdy. & Supply Co.
National Supply Co.
Oil Well Supply Co.
Pattin Bros. Co.
Reid, Joseph, Gas Engine Co.
Spence Machine Co.
Titusville Iron Works Co.

Pumps—Boiler Feed—
Ajax Iron Works.
Byron Jackson Pump Mfg. Co., Inc.
Fairbanks-Morse & Co.
Gardner Governor Co.
Oil Well Supply Co.

Pumps—Centrifugal—
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Dean Hill Pump Co.
Fairbanks-Morse & Co.
Worthington Pump & Machinery Corp.

Pumps—Direct Driven—
Aldrich Pump Co.
Bessemer Gas Engine Co.

Pumps—Electric—
Prescott Co.

Pumps—Fuel Oil Service—
Aldrich Pump Co.
Blackmer Rotary Pump Co.
Northern Fire Apparatus Co.

Pumps—Fuel Oil Transfer—
Aldrich Pump Co.
Byron Jackson Pump Mfg. Co., Inc.

Pumps—Gasoline and Oil for Filling Stations—
Gilbert & Barker Mfg. Co.

Pumps—Gear Driven—
Aldrich Pump Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
Prescott Co.

Pumps—Hot Oil—
Byron Jackson Pump Mfg. Co., Inc.

Pumps—Pipe Line—
Aldrich Pump Co.

Byron Jackson Pump Mfg. Co., Inc.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
National Transit Pump & Machine Co.
Prescott Co.
Worthington Pump & Machinery Corp.

Pumps—Power—
Aldrich Pump Co.
Dean Brothers Co.
Fairbanks-Morse & Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Myers, F. E., Bro. & Co.
National Transit Pump & Machine Co.
Novo Engine Co.
Prescott Co.
Waukesha Motor Co.

Pumps—Refinery—
Aldrich Pump Co.
Byron Jackson Pump Mfg. Co., Inc.
Dean Hill Pump Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Kinney Mfg. Co.
National Transit Pump & Machine Co.
Northern Fire Apparatus Co.

Pumps—Rotary—
Blackmer Rotary Pump Co.
Northern Fire Apparatus Co.
Roots, P. H. & F. M., Co.

Pumps—Sand—
Bridgeport Machine Co.
Larkin & Co.

Pumps—Slush—
Gardner Governor Co.

Pumps—Steam—
Dean Brothers Co.
Fairbanks-Morse Co.
Frick-Reid Supply Co.
Gardner Governor Co.
Gaso Pump & Burner Mfg. Co.
Lucey Mfg. Corp.
National Transit Pump & Machine Co.
Oil Well Supply Co.
Prescott Co.

Pumps—Suction—
Gaso Pump & Burner Mfg. Co.

Pumps—Vacuum—
Bessemer Gas Engine Co.
Clark Brothers Co.
Gaso Pump & Burner Mfg. Co.
Miller Improved Gas Engine Co.
Roots, P. H. & F. M., Co.

Pumps—Water—
Aldrich Pump Co.
American Well Works.
Byron Jackson Pump Mfg. Co., Inc.
Gaso Pump & Burner Mfg. Co.
Northern Fire Apparatus Co.
Prescott Co.

Purifiers—Oil Absorption—
Sharpless Specialty Co.

Pyrometers—
Brown Instrument Co.
Republic Flow Meters Co.

R

Ratchet Pipe Cutters—
Toledo Pipe Threading Machine Co.

Ratchet Pipe Threaders—
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.

Ratchet Reamers—
Nye Tool & Machine Works.

Ratchet Stocks and Dies—
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.

Ratchet Wrenches (See Wrenches)

Receiving Boxes—
Reid, Joseph, Gas Engine Co.

Recorders—Differential Pressure—
Metric Metal Works.

Refinery Equipment—
American Radiator Co.
Braun, C. F., & Co.
Carbondale Machine Co.
Chicago Bridge & Iron Works.
Graver Corp.
Griscom-Russell Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Appliance Co.
Petroleum Iron Works Co.
Power Piping Co.
Power Specialty Co.
Reid, Joseph, Gas Engine Co.
Ross Heater & Mfg. Co., Inc.
Ross-Meehan Foundries.
Smith Separator Co.
Southwestern Engineering Co., Inc.
Southwestern Engineering Corp.
United Iron Works, Inc.
Universal Oil Products Co.
Vogt, Henry, Machine Co.
Walsh & Weidner Boiler Co.
Westcott & Greis.
Widdell Engineering Co.

Refinery Pumps (See Pumps)—

Refractories—Furnace, Stills and Baffles—
Botfield Refractories Co.

Refrigerating Machinery—
Carbondale Machine Co.
Climax Engineering Co.
United Iron Works, Inc.
Vogt, Henry, Machine Co.

Regulators—
Fisher Governor Co., Inc.
Smith Separator Co.

Rental Service—
Bridgeport Machine Co.

Reversible Clutches—
Bessemer Gas Engine Co.

Rig Irons—
International Supply Co.
Lucey Mfg. Corp.
National Supply Co.
Oil Well Supply Co.
Parkersburg Rig & Reel Co.

Rigs—Drilling, All Steel—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.

Rigs—Portable Drilling—
National Supply Co.
National Turnbuckle Derrick Co.
Star Drilling Machine Co.

River Clamps (See Clamps)—

Rods—Polish—
Jones, S. M., Co.

Rods—Pull—
Axelson Machine Co.
Columbus Sucker Rod Co.
Jones, S. M., Co.
Sheffield Steel Corp.

Rods—Sucker—
Axelson Machine Co.
Columbus Sucker Rod Co.
D & B Pump & Supply Co.
Frick-Reid Supply Co.
Jones, S. M., Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Sheffield Steel Corp.

Rods—Valve—
Jones, S. M., Co.

Roofing Asbestos—
Johns-Manville, Inc.

Rope Socket Metal—
Eagle-Picher Lead Co.

Rope—Manila—
Ajax Rope Co., Inc.
Bovaird Supply Co.
Republic Supply Co.

Rope—Wire—
Ajax Rope Co., Inc.
American Cable Co.
Bovaird Supply Co.
Bridgeport Machine Co.
Broderick & Bascom Rope Co.
International Supply Co.
Jarecki Mfg. Co.
Leschen, A. & Sons, Rope Co.
Wickwire-Spencer Steel Corp.

Rotary Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Rotary Disc Bits (See Bits)—

Rotary Drilling Equipment—
Climax Engineering Co.
Continental Supply Co.
Emsco Derrick & Equipment Co.
Frick-Reid Supply Co.
International Derrick & Equipment Co.
Link-Belt Co.
Lucey Mfg. Corp.
Lufkin Foundry & Machine Co.
National Supply Co.
Oil Well Supply Co.
Republic Supply Co.
Titusville Iron Works Co.

Rotary Drive Bushings (See Bushings—Rotary Drive)—

Rotary Lines (See Rope—Wire)—

Rotary Post—
Reed Roller Bit Co.

Rotary Rock Bits (See Bits)—

Rotary Tool Joints—
Bartlesville Supply Co.
Hughes Tool Co.

Rotary Ventilators (See Ventilators)—

Rubber Belting (See Belting)—

Rubber Hose (See Hose)—

Run Down Tanks (See Tanks)—

Rust Preventatives—
Dearborn Chemical Co.
Eagle-Picher Lead Co.

S

Sand Lines—Manila —
Ajax Rope Co., Inc.

Sand Lines—Wire—
Ajax Rope Co., Inc.
Broderick & Bascom Rope Co.
Wickwire-Spencer Steel Corp.

Sand Pumps (See Pumps, Sand)—

Screens—Oil Well—
Layne & Bowler Co.

Screens—Water Well—
Layne & Bowler Co.

Screws Temper—
Burns Tool Co.

Seamless Steel Couplings—(See Couplings Seamless Steel)—

Separators—Centrifugal—
Miller, Max B., & Co.
Sharpless Specialty Co.

Separators—Gas and Oil—
American Tank Co.
Smith Separator Co.

Sheet Lead—Chemical and Antimonial—
Eagle-Picher Lead Co.

Sheets—Corrugated, Black and Galvanized—
American Sheet & Tin Plate Co.
Ryerson, Jos., T., & Son, Inc.
United Alloy Steel Corp.

Sheets—Steel—
American Sheet & Tin Plate Co.
Republic Iron & Steel Co.
Sheffield Steel Corp.
United Alloy Steel Corp.

Shingles—Asbestos—
Johns-Manville, Inc.

Sleeves—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

Sleeves—Split—
Dayton Pipe Coupling Co.
Dresser, S. R., Mfg. Co.

Slush Pump Pistons (See Pistons)—

Slush Pumps—(See Pumps)—

Smoke Stacks—
Donovan Boiler Works.

Snuffers—Fire—
Simplex Equipment Co.

Sockets—
Acme Fishing Tool Co.
Bridgeport Machine Co.
Spang & Co.

Sockets—Swivel—
Arbon, Paul, & Co.

Sockets—Wire Rope—
Chicago Steel Foundry Co.

Soda Ash—
Mathieson Alkali Works, Inc.

Soda—Caustic—
Mathieson Alkali Works, Inc.

Solders—Bar and Wire—
Eagle-Picher Lead Co.
Hoyt Metal Co.

Spark Plugs—
Mosler Metal Products Corp.

Spears—
Acme Fishing Tool Co.
Brown Welding & Machine Co.

Special Steel (See Steel Special)—

Split Sleeves (See Sleeves)—

Sprockets—Power Transmission—
Ajax Iron Works.
Chain Belt Co.

Stands—Vise—
Nye Tool & Machine Works.

Stationary Pipe Threading Die Heads (See Die Heads)—

Steam Pumps (See Pumps)—

Steel—All Kinds—
Ryerson, Jos., T., & Son, Inc.

Steel—Alloy—
Central Steel Co.
Timken Roller Bearing Co.
United Alloy Steel Corp.

Steel—Bit—
Central Steel Co.

Steel—Hot Rolled Strip—
Central Steel Co.

Steel—Special—
Central Steel Co.
United Alloy Steel Corp.

Steel Band Wheels (See Band Wheels—Steel)—

Steel Bridges—(See Bridges)—

Steel Bull Wheels (See Bull Wheels—Steel)—

Steel Castings (See Castings)—

Steel Couplings for Casing, Line Pipe, Drill Pipe and Tubing (See Couplings)—

Steel Crown Blocks (See Crown Blocks)—

Steel Derricks (See Derricks)—

Steel Fabricators—Structural—
Austin Co.
Braden Co.
Graver Corp.
International Derrick & Equipment Co.

Steel Fittings (See Fittings)—

Steel Pitmans—
International Derrick & Equipment Co.
Moore, Lee C., & Co., Inc.
Slater Brothers Turnbuckle Derrick Co.

Steel Plate Construction—
Chicago Bridge & Iron Works
Graver Corp.
Kaw Boiler Works Co.
Petroleum Iron Works Co.
Tulsa Boiler & Machinery Co.
Vogt, Henry, Machine Co.

Steel Sheets (See Sheets, Steel)—

Steel Valves (See Valves—Steel)—

Steel Walking Beams (See Walking Beams—Steel)—

Steel Wheels and Tug Rims—
International Derrick & Equipment Co.

Stills—
Chicago Bridge & Iron Works.
Graver Corp.
Kaw Boiler Works Co.
Kellogg, M. W., Co.
McKee, Arthur G., & Co.
Newton Process Mfg. Co.
Petroleum Iron Works Co.
Vogt, Henry, Machine Co.
Widdell Engineering Co.

Stocks & Dies—
Borden Co.
Nye Tool & Machine Works.
Toledo Pipe Threading Machine Co.

Structural Steel Fabricators (See Steel Fabricators)—

Stuffing Boxes—
Axelson Machine Co.
Kansas City Hay Press Co.

Sucker Rods (See Rods—Sucker)

Suction Pumps (See Pumps)—

Sulphuric Acid—
Eagle-Picher Lead Co.

Swabs—
Arbon, Paul, & Co.
Guiberson Corp.
Hoffman Mfg. Co.
Saunders Bros.
Simplex Equipment Co.

Swedge Nipples—
Dresser, S. R., Mfg. Co.
Harrisburg Pipe & Pipe Bending Co.

Swivels—
Layne & Bowler Co.
Lucey Mfg. Corp.
Titusville Iron Works Co.

T

Tank Cars (See Cars—Tanks)—

Tank Cars Leased (See Cars)—

Tank Equipment—
Oil Conservation Engineering Co.

Tanks—Bolted—
American Tank Co.
Butler Mfg. Co.
Maloney Tank Mfg. Co.
Parkersburg Rig & Reel Co.

Tanks—Bulk Station—
Butler Mfg. Co.
Graver Corp.

Tanks—Cylindrical—
Petroleum Iron Works Co.

Tanks—Elevated Steel—
Chicago Bridge & Iron Works.

Tanks—Field Storage—
American Car & Foundry Co.
American Tank Co.
Donovan Boiler Works.
Graver Corp.
Kaw Boiler Works.
Kewanee Boiler Co.
Maloney Tank Mfg. Co.
Petroleum Iron Works Co.
Pittsburgh-Des Moines Steel Co.
Riter-Conley Co.
Tulsa Boiler & Machinery Co.
United Iron Works, Inc.

Tanks—Horizontal Storage—
Graver Corp.
Kaw Boiler Works Co.
Maloney Tank Mfg. Co.

Tanks—Run Down—
Donovan Boiler Works.
Graver Corp.
Kaw Boiler Works Co.
Newton Process Mfg. Co.

Tanks—Truck—
American Tank Co.
Butler Mfg. Co.
White Co.

Tanks—Underground—
Butler Mfg. Co.
Gilbert & Barker Mfg. Co.
Graver Corp.
Kewanee Boiler Co.
Pittsburgh-Des Moines Steel Co.
Tulsa Boiler & Machinery Co.

Tanks—Welded—
American Tank Co.
Chicago Bridge & Iron Works.

Taper Taps—
Hughes Tool Co.

Tapes—Measuring for Oil Gauging—
Lufkin Rule Co.

Temperature Controllers (See Controllers—Temperature)—

Temper Screws (See Screws)—

Thermometers—Indicating and Recording—
American Schaeffer & Budenberg Corp.
Bristol Co.
Taylor Instrument Co.

Threading Machines—
Bignall & Keeler Machine Wks.
Cox & Sons Co., The
Landis Machine Co.

Thread Protectors—
Spang & Co.

Tires—Automobile—
Continental Supply Co.

Tongs—
Bridgeport Machine Co.
Wilson Oil Tools Corp.

Tongs—Back Up—
Williams, J. H., & Co.

Tongs—Break Out—
Reed Roller Bit Co.
Williams, J. H., & Co.

Tongs—Casing—
Dunn Mfg. Co.
Guiberson Corp.

Tongs—Chain Pipe—
Williams, J. H., & Co.

Tongs—Pipe—
National Transit Pump & Machine Co.

Tongs—Rotary—
Dunn Mfg. Co.

Tongs—Tool Joint—
Guiberson Corp.
Hughes Tool Co.
Reed Roller Bit Co.

Tongs—Tubing—
Dunn Mfg. Co.

Tool Chests—Pipe—
Nye Tool & Machine Works.

Tool Joints—
Bridgeport Machine Co.
Federal Supply Co.
Hughes Tool Co.
Lucey Mfg. Corp.
Oil Well Supply Co.
Regan Forge & Engineering Co.

Tool Joint Tongs (See Tongs)

Tools—Fishing and Drilling (See Drilling and Fishing Tools)—

Tools—Oil Well Drilling (See Drilling and Fishing Tools)—

Torches—
Oxweld Acetylene Co.

Tractor Oil (See Oil—Tractor)—

Tractors—
International Harvestor Co. of America.
Rock Island Plow Co.

Transmission Belt—Rubber—
Goodrich, B. F. Rubber Co.
United States Rubber Co.

Transmission Lining—
Stanley Belting Corp.

Traveling Block—
Lucey Mfg. Corp.
Regan Forge & Engineering Co.
Wright Mfg. Co.

Trenches—Vertical Boom—
Barber-Greene Co.

Trucks—Motor—
Ford Motor Co.
General Motors Truck Co.
International Harvester Co. of of America.
White Co.

Truck Tanks (See Tanks)—

Truck Tires (See Tires—Truck)—

Tubes—Boiler, Charcoal Iron—
Byers, A. M., Co.
Reading Iron Co.

Tubes—Boiler Steel—
National Tube Co.
Ryerson, Jos. T., & Son, Inc.

Tubing—
Babcock & Wilcox Tube Co.
Byers, A. M., Co.
Central Tube Co.
National Tube Co.
Reading Iron Co.
South Chester Tube Co.
Spang, Chalfant & Co., Inc.
Superior Tube Co.

Tubing Catchers—
Dunn Mfg. Co.
Guiberson Corp.

Tubing Elevators (See Eelevators, Casing and Tubing)—

Tubular Goods—
Oil Well Supply Co.
Republic Iron & Steel Co.
Spang, Chalfant & Co., Inc.

Tubular Goods—Wrought Iron—
Byers, A. M., Co.
Reading Iron Co.

Turbines for Lighting Equipment
Lucey Mfg. Corp.
Westinghouse Electric & Mfg. Co.

Turbine Generators (See Generators—Turbine)—

Turnbuckle Derricks (See Derricks)—

U

Underground Tanks (See Tanks)

Underreamer Bit Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Underreamer Cutter Steel—
Andrews Steel Co.
Heppenstall Forge & Knife Co.

Underreamers—
Bridgeport Machine Co.
Brown Welding & Machine Co.
Guiberson Corp.
Wilson Oil Tools Corp.

Unions—
Continental Supply Co.
Kelly & Jones Co.

V

Vacuum Pumps (See Pumps)—

Valuations—
American Appraisal Co.

Valves—Blow-off—
Homestead Valve Mfg. Co.

Valves—Brass and Bronze—
Homestead Valve Mfg. Co.
Kelly & Jones Co.
Lunkenheimer Co.
Reading Steel Casting Co.
Walworth Mfg. Co.

Valves—Cast Steel—
Chapman Valve Mfg. Co.
Homestead Valve Mfg. Co.

Valves—Check—
Gaso Pump & Burner Mfg. Co.
Lunkenheimer Co.

Valves—Drop Forged Steel—
Edward Valve & Mfg. Co.
Vogt, Henry, Machine Co.

Valves—Gate—High and Low Pressure—
Chapman Valve Mfg. Co.
Continental Supply Co.
Crane Co.
Darling Valve & Mfg. Co.
Kelly & Jones Co.
Kennedy Valve Mfg. Co.
Kerotest Mfg. Co.
Ludlow Valve Mfg. Co.
Lunkenheimer Co.
Murray Tool & Supply Co.
Powell, Wm., Co.

Valves—Iron—
Chapman Valve Mfg. Co.
Lunkenheimer Co.
Reading Steel Casting Co.

Valves—Metal Pump—
Durabla Mfg. Co.

Valves—Pump—
United States Rubber Co.

Valves—Relief—Supersensitive—
Davis Regulator Co.

Valves—Steel—
Chapman Valve Mfg. Co.
Edward Valve Mfg. Co.
Kelly & Jones Co.
Kerotest Mfg. Co.
Lunkenheimer Co.
Metric Metal Works.
Powell, Wm., Co.
Reading Steel Casting Co.

Valves—Tank Vent—
Oil Conservation Engineering Co.

Valves—Working Barrel—
Atlas Ball Co.
Axelson Machine Co.
D & B Pump & Supply Co.
Hough, Charles N., Mfg. Co.
Northup Equipment Co.
Oil Well Supply Co.

Varnishes—
Arco Company, The.
Sherwin-Williams Co.

Ventilators—Rotary—
Swartwout Co.

Vises—Bench—
Nye Tool & Machine Works.

Vises—Pipe—
Nye Tool & Machine Works.

Vises—Post—
Nye Tool & Machine Works.

W

Wagons—Truss Wheel—
Athey Truss Wheel Co.

Walking Beams—Steel—
Moore, Lee C., & Co., Inc.

Water Gauge Cocks (See Cocks)—

Water Pumps (See Pumps)—

Water Softeners and Filters—
Butler Mfg. Co.
Graver Corp.

Water Well Screens (See Screens)

Wax—
Barnsdall Refining Co.
Gulf Refining Co.
Pure Oil Co.

Weight Indicators—
Hughes Tool Co.

Welded Tanks (See Tanks)—

Welding Accessories—Electric—
Wilson Welder & Metals Co.

Welding and Cutting Apparatus—
Oxweld Acetylene Co.

Welding Machines—Electric—
Wilson Welder & Metals Co.

Welding Supplies—
Oxweld Acetylene Co.

Welding Wire—
Frick-Reid Supply Co.
Oxweld Acetylene Co.
Wilson Welder & Metals Co.

Well Drilling and Fishing Tools—(See Drilling and Fishing Tools)—

Well Drilling Equipment (See Drilling Equipment)—

Well Shooting—
Eastern Torpedo Co.
Zero Hour Torpedo Co.

Wheels—Pipe Cutter—
Nye Tool & Machine Works.

Wheel—Steel Automotive—
Budd Wheel Co.

Winches—
Braden Co.
Oil Conservation Engineering Co.

Wire Lines (See Cables—Steel)—

Wire Rope (See Rope—Wire—

Wood Patterns and Models—
Gaso Pump & Burner Mfg. Co.

Working Barrels—
Axelson Machine Co.
D & B Pump & Supply Co.
Franklin Valveless Engine Co.
Frick-Reid Supply Co.
Hough, Charles N., Mfg. Co.
McGregor Working Barrel Co.
Norris, W. C.
Northrup Equipment Co.
Oil Well Supply Co.

Working Barrel Valves (See Valves—Working Barrel)—

Wrenches—Closet Spuds—
Nye Tool & Machine Works.

Wrenches—Drop Forged—
Williams, J. H., & Co.

Wrenches—Pipe—
Trimont Mfg. Co.
Walworth Mfg. Co.

Wrenches—Ratchet—
Dresser, S. R., Mfg. Co.
Nye Tool & Machine Works.

Z

Zinc Oxide—
Eagle-Picher Lead Co.

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS

Pipe Line Statement for January, 1926 Runs

	Month	Da. Av.
*Prairie Pipe Line Co...	3,782,000	122,000
Gulf Pipe Line Co....	1,110,284	35,814
Texas Pipe Line Co.....	563,707	18,184
Magnolia Petroleum Co.	1,095,747	35,347
Cosden Pipe Line Co...	786,626	25,372
Empire Pipe Line Co...	693,036	22,356
Sinclair Pipe Line Co...	1,594,454	51,434
*Other lines	7,286,000	235,000
Total January	16,910,854	545,507
Total December	17,429,710	562,249

Shipments

†Prairie Pipe Line Co...	4,187,390	135,077
Gulf Pipe Line Co.....	1,114,750	35,960
Texas Pipe Line Co...	544,921	17,578
Magnolia Petroleum Co.	1,267,082	40,873
Cosden Pipe Line Co...	935,599	30,181
Empire Pipe Line Co...	741,950	23,931
†Sinclair Pipe Line Co.	2,533,723	81,733
*Other lines	7,843,000	253,000
Total January	19,168,415	618,333
Total December	20,050,761	646,863
Difference	882,346	38,530

Stocks

	Bbls.
*Prairie Oil & Gas Co.....	27,300,000
*Prairie Pipe Line Co.....	2,000,000
Gulf Pipe Line & Gypsy Oil Co.	6,660,284
The Texas Co.....	4,409,047
Magnolia Petroleum Co.....	5,744,000
Cosden Pipe Line Co.....	1,698,657
Empire Pipe Line Co.....	2,966,141
*Sinclair Crude Oil Purchasing Co.	22,000,000
Carter Oil Co.	15,480,643
*Other lines	10,000,000
Total January	98,258,772
Total December	99,352,522
Difference	1,093,750

*Estimated.

†Prairie shipments also include Texas crude oil and Sinclair shipments include also Wyoming and Texas crude oil.

Note—Stocks do not include approximately 5,900,000 bbls. held in storage on private tank farms and leases.

EASTERN PIPE LINES

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for December and January:

	Dec. '25	Jan. '26
Nat. Transit	142,875.10	143,083.02
S. W. Pa. P. L.	81,252.71	77,636.84
Eureka P. L.	349,600.31	328,099.81
Buckeye P. L. (Macksburg)	314,284.81	279,450.58
Buckeye P. L. (Cleveland)	11,199.41	11,364.93
Buckeye P. L. (Lima, etc.)	115,800.20	117,302.17
Indiana P. L.	8,529.02	8,872.25
Cumberland P. L....	273,857.20	264,029.33
N. Y. Transit	19,369.10	18,738.53
Tidewater P. L. ...	143,964.94	145,119.51
Pure Oil	173,742.21	168,182.43
Emery P. L.	49,321.62	48,775.97
Indian Ref.	77,197.35	80,966.82
Paragon Dev.	28,795.89	26,760.22
Pittsburgh P. L. ...	7,289.93	6,141.78
Total	1,797,182.81	1,724,524.19
Daily average ...	57,973.64	55,629.81

Note—Indian Refining Co. also reported other receipts of 288,281.87 bbls. Paragon Refining Co. had other receipts of 144,822.43 bbls. Paragon Development had other receipts of 2,718.44 bbls. Pure Oil had other receipts of 50,636.88 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for December and January:

	Dec. '25	Jan. '26
Nat. Transit	443,017.16	388,806.28
S. W. Pa. P. L. ...	351,978.59	366,562.67
Eureka P. L.	170,749.37	164,947.50
Buckeye P. L. (Macksburg) . ..	119,899.62	117,122.01
Buckeye P. L. (Cleveland)	971.01	1,122.83
Buckeye P. L. (Lima, etc.)	817,463.36	786,501.04
Indiana P. L.	996,091.56	1,163,995.13
Cumberland P. L....	142,888.09	102,188.71
N. Y. Transit	531,362.75	708,005.50
Northern P. L.	122,381.61	135,305.06
Tidewater P. L. ...	132,574.09	107,972.02
Pure Oil	183,467.60	224,858.49
Emery P. L.	45,573.05	41,988.55
Paragon Ref.	103,951.35	161,272.07
Indian Ref.	406,210.43	428,138.88
Paragon Dev.	31,017.50	31,314.40
Pittsburgh P. L. ...	6,434.64	7,640.10
Total	4,655,030.57	4,837,741.24
Daily average ...	150,162.27	156,056.20

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of December and January, were as follows:

	Dec. '25	Jan. '26
Nat. Transit	971,135.56	1,010,068.01
S. W. Pa. P. L.	703,426.32	705,514.46
Eureka P. L.	1,499,699.86	1,503,389.89
Buckeye P. L. (Macksburg) . ..	247,415.66	335,515.41
Buckeye P. L. (Cleveland)	62,224.62	72,522.50
Buckeye P. L. (Lima, etc.)	3,358,078.13	2,773,898.18
Indiana P. L.	532,820.05	536,488.64
Cumberland P. L. ..	579,400.86	607,313.30
Southern P. L.	479,734.35	497,782.56
N. Y. Transit	756,602.76	659,952.29
Northern P. L.	481,708.84	449,408.69
Pure Oil	409,869.56	400,945.59
Emery P. L.	24,726.50	30,751.95
Paragon Ref.	65,041.84	48,043.84
Indian Ref.	275,004.53	218,689.98
Paragon Dev.	5,999.82	4,800.92
Pittsburgh P. L. ...	5,955.61	4,084.15
Total 10,458,445.36		9,859,170.36
Increase	609,712.29	599,275.00

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of December and January showing the gross stocks of the above fields:

	Dec. '25	Jan. '26
Penna.	3,842,589.45	3,862,226.25
Lima	1,070,027.70	1,025,702.95
Kentucky	1,140,119.24	1,197,665.71
Mid-Continent.	4,324,764.42	3,717,398.58
Illinois	80,954.55	55,576.87
Total 10,458,445.36		9,859,170.36

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1923	1924	1925	1926
January	75,790	62,658	56,831	55,630
February	71,093	68,023	60,606	.....
March	76,592	68,721	60,575	.....
April	75,614	71,058	63,062	.....
May	77,365	63,942	59,217	.....
June	77,593	63,230	61,270	.....
July	71,879	64,208	62,639	.....
August	76,919	59,943	59,686	.....
September	72,358	62,930	62,510	.....
October	76,256	64,976	60,995	.....
November ...	70,762	56,282	59,350	.....
December ...	69,271	55,814	57,974	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1923	1924	1925	1926
January	171,067	145,518	157,859	156,056
February	164,219	148,732	160,863	.....
March	185,487	147,098	154,591	.....
April	170,751	147,611	151,429	.....
May	177,102	134,997	146,995	.....
June	173,598	143,010	149,467	.....
July	168,330	124,187	161,338	.....
August	142,776	123,120	161,730	.....
September	137,266	127,325	156,719	.....
October	134,597	123,170	145,388	.....
November ...	131,426	124,400	143,582	.....
December ...	139,909	151,392	150,162	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1924	1925	1926
January	12,907,202	11,353,276	9,859,170
February	11,844,068	11,192,924	.....
March	10,906,752	11,158,297	.....
April	10,922,742	11,062,082	.....
May	11,335,309	11,207,562	.....
June	11,544,204	11,093,796	.....
July	12,062,361	11,067,453	.....
August	12,221,676	10,974,481	.....
September	12,206,836	10,781,763	.....
October	12,664,061	11,086,850	.....
November	12,268,530	11,068,158	.....
December	11,583,680	10,458,445	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above.

1925—	Receipts	Shipmts.	Stocks
January	1,730.86	1,681.15	12,938.49
February	2,702.05	4,564.70	11,076.84
March	3,177.21	2,354.30	11,899.74
April	3,040.41	1,780.11	13,159.04
May	2,814.99	5,719.90	10,254.13
June	3,052.75	1,221.83	12,085.05
July	2,639.34	3,174.10	11,550.29
August	3,216.97	1,577.99	13,189.27
September	2,929.99	5,352.05	10,767.21
October	3,869.75	1,499.34	12,137.62
November	2,759.66	2,571.32	12,383.40
December	2,661.87	3,441.67	11,503.60

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, Feb. 1	2,334,826.61
Runs from wells	638,209.44
Other receipts	532,451.44
Regular deliveries	464,580.43
Other deliveries	425,430.81

The amount of Illinois oil run by the Tidewater Pipe Co. in January was 27,034.11 bbls. and deliveries were 51,403.33 bbls. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

1925—		
February	636,635.20	514,661.51
March	754,335.68	611,348.49
April	622,866.14	637,242.35
May	692,671.94	568,573.61
June	700,090.46	589,535.34
July	724,481.26	564,713.19
August	673,652.38	650,649.97
September	706,434.87	610,697.61
October	706,532.00	633,682.32
November	664,556.30	488,449.19
December	665,086.99	578,938.47
1926—		
January	665,243.62	516,082.74

The Tidewater Pipe Co., Ltd., also delivered in January 146,142.53 bbls. of Oklahoma oil. The total deliveries of all grades by the Tidewater were 305,517.88 bbls.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

Average bbls. per day—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
October	3,065	4,258	20,484	9,806	5,161	42,774	.....	2,258	.....	.....	2,258	45,032
November	7,032	9,419	14,258	12,903	9,161	52,773	.....	.....	5,032	806	5,838	58,611
December	6,226	12,129	28,452	20,193	9,677	76,677	.....	4,839	4,871	.....	9,710	86,387
January	9,355	13,484	32,581	19,387	5,097	79,804	.....	.....	.....	65	65	79,869

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

Average bbls. per day—	ATLANTIC PORTS Baltimore	Boston	New York	Philadelphia	Others	Total	GULF COAST PORTS Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total All Ports
October	21,387	13,548	39,419	6,290	22,968	103,612	25,000	29,677	1,936	2,903	59,516	163,128
November	18,935	4,193	45,774	9,806	33,419	112,127	12,613	26,484	7,516	6,000	52,613	164,740
December	12,806	20,548	25,613	15,064	30,613	114,644	13,129	25,387	6,925	5,516	50,967	165,611
January	12,451	19,484	49,451	12,645	21,903	115,934	21,903	25,871	5,645	4,871	58,290	174,224

GROSS PRODUCTION OF THE UNITED STATES FOR 12 MONTHS

(IN BARRELS)

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mountains	Eastern Fields	Total
February:	Month	16,869,823	13,905,780	11,232,593	2,466,660	2,886,296	1,556,914	2,676,326	2,957,000	54,551,411
	Daily average	602,494	496,635	401,164	88,095	103,082	55,604	95,583	105,606	1,948,264
March:	Month	18,626,019	14,403,716	13,063,907	2,824,534	3,564,473	1,807,559	2,734,235	3,202,000	60,225,443
	Daily average	600,839	464,636	421,384	91,114	114,983	58,308	88,201	103,290	1,942,756
August:	Month	21,005,580	14,441,040	11,696,365	2,971,110	7,560,230	1,767,977	2,744,691	3,084,000	62,837,574
	Daily average	677,599	465,840	423,179	99,037	252,008	58,903	91,490	102,800	2,094,586
May:	Month	18,820,328	14,443,675	13,077,697	3,493,266	11,813,996	1,886,752	2,799,542	3,167,300	69,502,556
	Daily average	607,107	465,925	421,861	112,686	381,097	60,863	90,308	102,171	2,242,015
June:	Month	19,288,135	13,832,970	12,602,540	3,229,440	9,200,372	1,830,965	2,754,498	3,389,000	66,127,920
	Daily average	642,938	461,099	420,085	107,648	306,672	61,032	91,816	109,000	2,204,264
July:	Month	20,411,049	14,263,565	12,337,598	3,686,675	7,835,819	1,898,178	3,129,199	3,348,000	66,910,083
	Daily average	658,421	460,115	397,984	118,925	252,768	61,231	100,942	108,000	2,158,390
August:	Month	21,005,580	14,441,040	11,936,079	3,558,087	7,450,580	1,858,542	3,250,448	3,177,000	66,677,357
	Daily average	677,599	465,480	385,032	114,777	240,341	56,727	104,853	102,484	2,150,883
September:	Month	20,062,763	14,825,040	11,264,890	3,393,270	6,457,960	1,776,570	3,235,625	3,212,000	64,228,108
	Daily average	668,759	494,168	375,496	113,109	215,265	59,219	107,854	107,067	2,140,937
October:	Month	20,015,076	14,931,199	11,196,511	3,477,146	6,409,281	1,871,830	3,394,990	3,248,000	64,534,033
	Daily average	645,648	481,329	361,178	112,166	206,751	60,382	109,500	104,774	2,081,743
November:	Month	19,095,907	14,590,980	10,650,087	3,221,760	5,927,955	1,758,882	3,088,121	2,992,000	61,325,692
	Daily average	636,530	486,366	355,003	107,397	197,599	58,629	102,937	99,753	2,044,190
December:	Month	19,249,711	14,123,848	10,930,455	3,308,816	6,047,883	1,763,966	3,187,164	3,086,900	61,698,742
	Daily average	620,959	455,608	352,595	106,736	195,093	56,902	102,812	99,552	1,990,282
January:	Month	19,069,563	13,674,812	10,880,814	3,250,536	5,489,620	1,606,952	3,136,280	3,075,200	60,183,778
	Daily average	615,147	441,123	350,994	104,856	177,084	51,835	104,396	99,200	1,941,090
Total 12 months		230,472,617	171,482,076	141,867,536	38,881,200	80,644,455	21,384,188	36,131,128	37,938,400	758,802,700
Daily average		631,435	469,814	388,678	106,522	220,943	58,586	98,990	103,941	2,078,911

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The OIL and GAS JOURNAL

PRODUCING REFINING MARKETING

Published Every Thursday TULSA, OKLAHOMA, MARCH 25, 1926 $6.00 a Year

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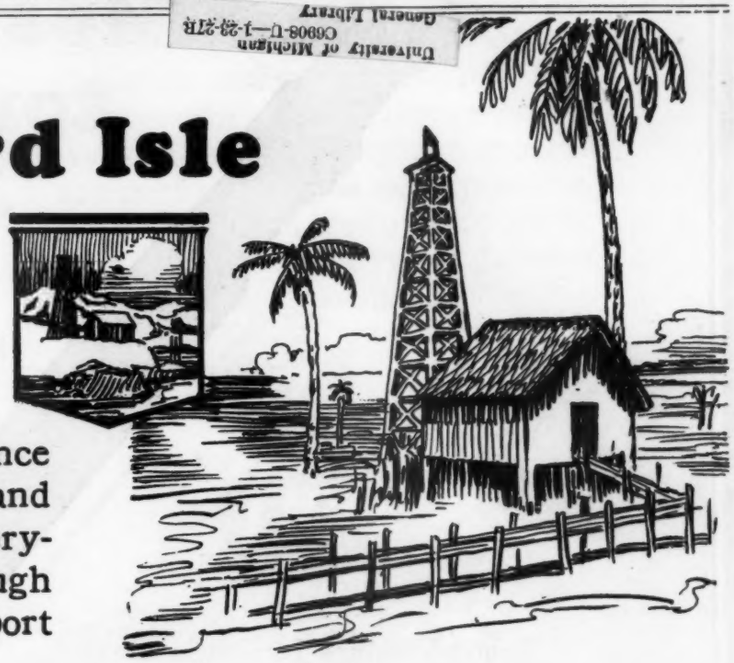
From Prince Edward Isle to Manila



As never before, from all over the petroleum world, the trade is coming to Bridgeport for its field-proven and strengthened tools—from Prince Edward Isle to Manila, from India and Russia, from South America and everywhere they are being ordered through the supply houses and the Bridgeport branches.

Extensive Wildcatting the Basis of Bridgeport Growth

Another era of extensive wildcatting is beginning during which, as in the past, Bridgeport tools will show their worth.

Often far from the bases of supplies, in unknown formation and under other trying conditions, their general worth, the excellent material in them and the superior worth of these tools will be revealed.

THE BRIDGEPORT MACHINE COMPANY

General Offices & Works WICHITA, KANSAS

Advertisers' Index on Page 17 Table of Contents on Page 18

The Safest and Most Satisfactory Drilling Jar Made!

Spang Weldless Drilling Jars have exceptional wearing qualities. Every oil field operator and every driller who has used Spang Jars—will verify this statement.

Spang Weldless Jars are made to meet the most severe service—they're manufactured from a single piece of tough alloy steel, a construction that absolutely eliminates the welds which constantly encourage failures and fractures.

Once you have tried the Spang Weldless Jar — you will use no other.

SPANG & COMPANY

BUTLER **PENNA.**

Sold by Your Supply Company

Spang Thread Protector

Protect your Tool Joints with SPANG Thread Protectors. Like all Spang products they guarantee absolute satisfaction and long, durable service.

Over 300 Supply Stores carry complete stocks of Spang Weldless Drilling Jars.

What price energy?

WHEN you buy oxygen you buy so much energy. It is concentrated energy, concentrated ability to do many kinds of unusual work.

One of the most important things to know about oxygen is how to use it efficiently. Concentrated energy of this kind is so easily wasted.

Linde oxygen has for years been the standard of the industry, but long ago Linde realized that the customer needed more than good oxygen. Every conceivable service connected with its application and efficient use must be available to him.

This is the reason for Linde service. It starts with the product and its delivery to the customer. It continues with service men of every rank, from practical welders to consulting engineers of wide experience, and with a research laboratory where new advances in the use of the oxy-acetylene process are perfected. It is even possible, with Linde Procedure Controls, for a customer to carry out difficult welding jobs unassisted.

LINDE Procedure controls for all types of pipe fabrication and line laying are available to customers. Our files contain many other Procedure Controls, such as fabrication of tanks, gear guards and steel pipe manifolds and reclamation of cast iron pulleys and pitted pipe. Special Procedure Controls will be prepared at the request of any Linde customer.

THE LINDE AIR PRODUCTS COMPANY
General Offices:
Carbide and Carbon Building, 30 East 42d Street, New York
37 PLANTS—59 WAREHOUSES

LINDE OXYGEN

The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 15, 1911, at the postoffice at Tulsa, Okla., under the Act of March 3, 1879.

KEWANEE Boilers

Their capacious dome and conservative rating, assure a great reserve supply of steam

You can bank on a Kewanee Boiler producing every ounce of steam guaranteed by its rated capacity—*and more*. And the capacious dome holds a great reserve supply of steam for sudden demands.

Add to this the fact that Kewanee Boilers are husky enough to stand hard usage and you have the reason why they are the **preferred boilers in the oil fields.**

By Invitation Member

Emblem of BUSINESS CHARACTER

Rice Leaders of the World Association

Represents High Standing in NAME-PRODUCT-POLICY

COPYRIGHT R.L.W.A.-TWIN AVE.-NEW YORK U.S.A.

KEWANEE BOILER COMPANY

KEWANEE, ILLINOIS

Makers of Steel Boilers, Steel Tanks, Water Heating Garbage Burners, Tubasco Water Heaters

Sold by International Supply Co., Tulsa

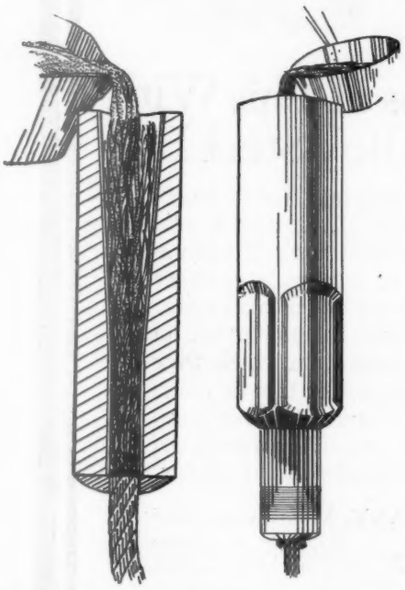
District Sales Offices:

Fort Worth, Texas Ardmore, Okla. Denver, Colo.

Casper, Wyoming Great Falls, Mont.

Branches in All Prominent Oil Fields

Eagle Rope Socket Metal melts at 750° Fahrenheit —it is practical and easy to pour in the field.



It is especially good for all types of wire rope sockets. The wire rope is cleaned and shredded in the usual way—and this new metal grips it tenaciously.

Write for this interesting booklet FREE

EAGLE Rope Socket Metal is cheaper—35% *lighter*— than No. 4 Babbitt

NOT only is the new EAGLE Rope Socket Metal—specially alloyed for socketing wire rope—safer and longer lasting than Number Four Babbitt. It is actually cheaper in its first cost—because of the fact that it is 35% lighter than Number Four Babbitt. This saving in first cost, plus the saving due to its longer life, has made this new scientific socketing metal doubly welcome. Jobbers, dealers and drillers have pronounced it a great success.

EAGLE Rope Socket Metal was developed as the result of experiments to find scientifically an alloy exactly suited to socketing wire rope. It is four times as hard as Number Four Babbitt (Brinell hardness 64)—tougher and more ductile. It forms a solid bond with wire rope, and holds it solid in the socket or swivel. It will not crack or break under shocks or strains.

EAGLE Rope Socket Metal is sold by all dealers. If yours cannot supply you, write direct to Eagle-Picher at Joplin. We will gladly send a free descriptive booklet upon request.

The EAGLE-PICHER LEAD COMPANY
Chicago · Joplin · Cincinnati

EAGLE
Rope Socket Metal

Producers of lead and allied products · Eleven Plants · Branches in all principal cities

There's Less of This With Agathon Alloy Steel Bits

Fewer pullings, fewer dressings, fewer delays follow the use of bits made of Agathon Steels. Users state such bits triple the actual drilling time at bottom of holes over that of bits made of other steel. Spend more time drilling—get down to oil faster and more economically with Agathon Steel bits. We do not make bits. We furnish the steel from which they are made. Insist that your next order of bits be made of Agathon Steel. Then note the difference—the savings. Ask for a copy of our handbook and the assistance of our metallurgists. Both are furnished without charge.

AGATHON STEELS

THE CENTRAL STEEL COMPANY, Massillon, Ohio

Swetland Bldg., Cleveland — Book Bldg., Detroit — Peoples Gas Bldg., Chicago
Aeolian Bldg., New York — University Block, Syracuse — Widener Bldg., Philadelphia
303 W. P. Story Bldg., Los Angeles, Calif. — 404 West First St., Tulsa, Oklahoma

AGATHON ALLOY STEELS

TRU-LAY

[REG. U. S. PATENT OFFICE]

*pre*FORMED WIRE ROPE

100 per cent—

increased pulling service

on sucker rods and pulling lines

The TOUGHEST JOB a wire rope can undergo — is where a TRACTOR is used for pulling. The first stand of rods or tubing is usually insufficient in weight to pull line from TRACTOR DRUM. The operator reverses drum and throws slack, which causes KINKS.

Kinked lines means short service—where this condition is encountered it does not injure Tru-Lay—for Tru-Lay resists kinking.

Any user of Tru-Lay for pulling will tell you the following:—

resists kinking *greater service*

LONGER SERVICE

balanced rope *resists unstranding*

Tru-Lay stocked in field stores by following Supply Houses—or mail the coupon for sample length and complete information.

AMERICAN CABLE COMPANY, *Inc.*

105 Hudson Street, New York City

District Offices: Chicago Cleveland Philadelphia Tulsa

Sold in field stores by: Jarecki Manufacturing Co. and Branches, Pittsburgh, Pa.; Jarecki Manufacturing Co. and Branches, St. Louis, Mo.; Marion Machine and Foundry Co. and Branches, Marion, Ind.; Fort Worth Well & Machinery Co., Fort Worth, Texas

Mail the coupon - - -

American Cable Co., Inc.
105 Hudson St.
New York

Gentlemen: Please send me a sample of Tru-Lay Rope and literature explaining the Tru-Lay principle. I am interested in the following grades, sizes and constructions: .....

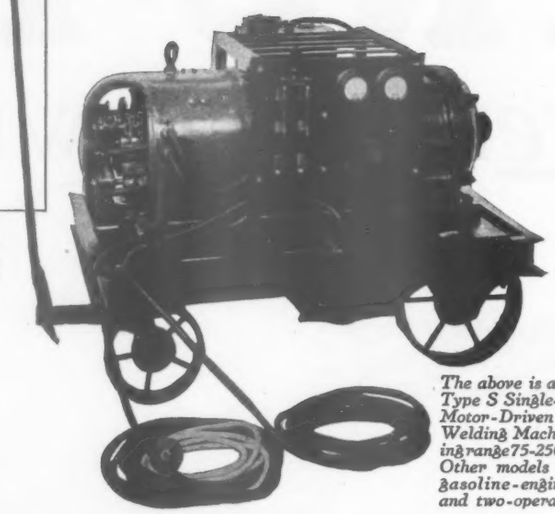
Name .....

Firm .....

Address .....

City ..... State .....

"I'll Tell You Why I Like Wilson Wire— It's Always Uniform"



The above is a Wilson Type S Single-Operator Motor-Driven Electric Welding Machine, welding range 75-250 amperes. Other models include gasoline-engine-driven and two-operator units.

Simplicity—Close Control—Ruggedness

Welders like Wilson Wire because they *know* they can depend on its uniformity—they know it's *always the same*—that every rod is like every other rod of the same grade (analysis). And they know they can secure just the right grade for every type of welding job—each grade designated by a color. There is no saving in using inferior wire just because it's cheap. Use Wilson. Write today for samples of Wilson "Color-tipt" Welding Wire, indicating the metal you desire to weld.

Unexcelled simplicity, close regulation, strength and ruggedness of every part—*better engineering throughout*—these are what make the Wilson Type S a *better welding machine.* Its features include a *self-exciting* generator; a commutator that always shows *less temperature rise than any other part of the machine;* an arc that is easy to strike and easy to maintain; a simple, compact control panel; a current adjustment by a simple turning of a field rheostat knob; a special resistance unit which can be supplied *for reducing the welding current to as low as 25 amperes* for light work and thin gauge metals. These and other features—many of which are found in no other machine—make the Wilson Type S the decided choice for practically every kind of welding.

The Wilson company devotes itself exclusively to the development and production of welding equipment and supplies. Its unusual experience in all classes of electric welding is available for the solution of your welding problems.

WILSON WELDER & METALS CO. INC., WILSON BLDG., HOBOKEN, NEW JERSEY

WILSON

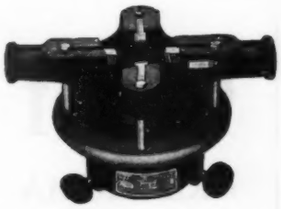
WELDING MACHINES AND WELDING WIRE

The No. 1A is the same as the No. 1 except that it is equipped with a ratchet for work where space is restricted.

No. 1A Nye Toledo Type Pipe Threader, complete .....$12.00 net
West of Rocky Mountains $12.75

NYE—*The Die Man*

Pipe Tool Maker to the American Plumber and Steamfitter



The rugged construction and few working parts account for the simplicity and durability of these Nye Toledo Type models. They do the work easily and efficiently.

No. 1 Nye Toledo Type Threader, complete .....$9.60 net
West of Rocky Mountains.....$10.20

Selling Talk

We hear a lot about "selling talk"—and that is about all that a lot of fellows are selling.

Of course, if what you want is conversation, that's one thing. If what you want is service, that's another.

Did it ever occur to you that Nye Tools are the most advertised and yet least advertised tools on the market?

We do a lot of advertising, but we don't do very much talking about Nye Dies. We don't have to.

All we try to do is to catch your eye, or your ear, or your foot, or anything we can get a hold of.

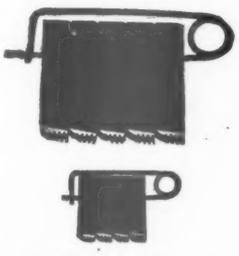
We don't talk to you much about Nye Dies. We just try to get you to try one, because it will talk for itself.

All we have ever claimed for Nye Dies was that they cut faster and easier and last longer than any other die of any other name or make.

The most we have said was that ours were the best pipe-cutting tools on earth. And we couldn't say less and tell the truth.

Whatever is to be said for the Nye Die it will say for itself if you give it the chance.

HARRY G. NYE.

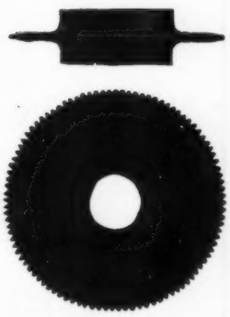


Nye Toledo Type Chasers

Also fit Nos. 1 and 2 Toledo Type Die Stocks.

Each set is guaranteed in every particular. Will cut much easier than other similar dies.

No. 1, 1" to 1½"....$ .75 per set net
No. 1, 2" ..... 1.25 per set net
No. 2, 2½" to 4" ..... 3.60 per set net



Nye thin blade cutter wheel, made to fit all standard makes of pipe cutters, and guaranteed against breakage in use. Made both in smooth and knurled edge.

THE NYE TOOL & MACHINE WORKS
4120 Fullerton Ave.,
Chicago, Illinois

Nye Saunders Pipe Cutters

No. 1 .....$ 1.80 net
No. 2 ..... 2.70 "
No. 3 ..... 6.60 "
No. 4 ..... 10.80 "
No. 5 ..... 16.80 "

Nye Drop Forged Pipe Cutter

No. 1-A ⅛ to 1¼" .....$2.25 net
No. 2-A ⅛ to 2" ..... 3.00 net
No. 3-A 1 to 3" ..... 5.00 net

Nye Barnes Pipe Cutters

No. 1 .....$ 2.25 net
No. 2 ..... 3.00 "
No. 3 ..... 5.00 "
No. 4 ..... 10.00 "
No. 5 ..... 15.00 "
No. 6 ..... 20.00 "

Gulf Refining Company

OKLAHOMA – TEXAS – LOUISIANA

Refiners of

PETROLEUM

GASOLINE
REFINED OIL
NAPHTHA
GAS OILS
PARAFFINE WAX
ASPHALT
FUEL OIL
LUBRICATING OILS
CYLINDER
ENGINE
CORDAGE

Red and Pale Paraffine Oils

General Sales Offices: PITTSBURGH, PA.

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OCEAN TERMINALS

Beverly, Mass.
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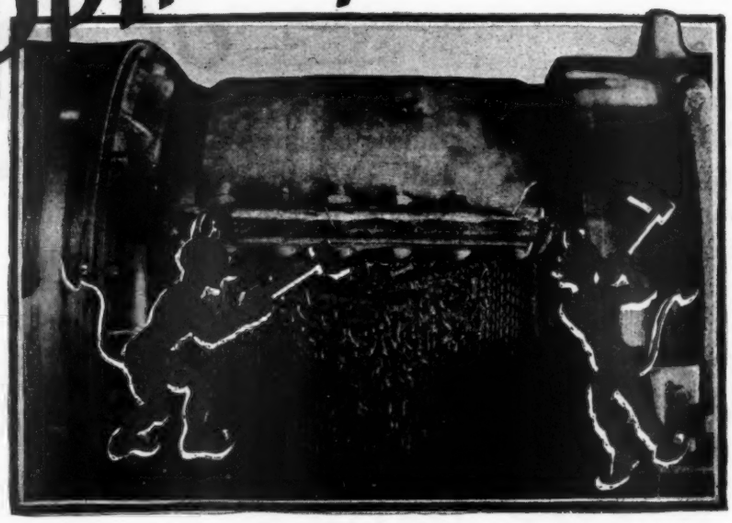
Savannah, Ga.
Gretna, La.
Magazine Point (Mobile), Ala.
Charleston, S. C.
Providence, R. I.
Jacksonville, Fla.
Galveston, Texas

STOP THAT CHOPPING!

Beware of Imitations and Infringements



Don't Let Those Little Old Style Belt Clamp Devils Ruin Your Belts!

TEXAS, OKLAHOMA AND KANSAS
At all stores of the
Continental Supply Company
Oil Well Supply Company
International Supply Company
The Republic Supply Company
Bridgeport Machine Company
Jarecki Manufacturing Company
Petroleum Supply Company
Bovaird Supply Company
Dunnigan Tool & Supply Company
Bradford Supply Company
Producer's Supply & Tool Company
Hercules Supply Company
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ARKANSAS AND LOUISIANA
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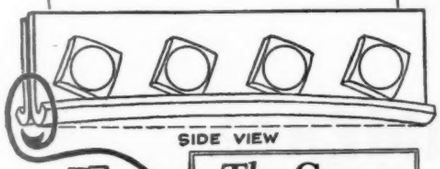
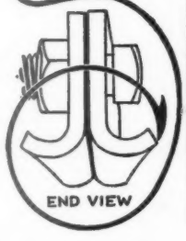
CALIFORNIA
California National Supply Company
Republic Supply Company
Regan Sales Company
Petroleum Equipment Company
United Oil Well Supply Company
MONTANA
Great Northern Tool & Supply Company





The Curve on the Clamp Fits the Crown on the Pulley
PATENT No. 1536278

USE Your Belts, But Don't ABUSE Them

—that's what costs you money!

The old straight bar belt clamp ABUSES your belt and shortens its life. Its straight edge, sharp corners chop your belt every time it passes over the pulley.

THE FEDERAL BELT CLAMP prevents bootlegging and adds life to your belt. The curve on the clamp fits the crown on the pulley, and the moulded rubber filler holds the belt firmly against the curve on the outside clamp and forms an uninterrupted curved surface, fitting smoothly against the pulley.

THE FEDERAL SUPPLY CO.

Manufacturers of

FEDERAL BELT CLAMPS "BETTER BITS"

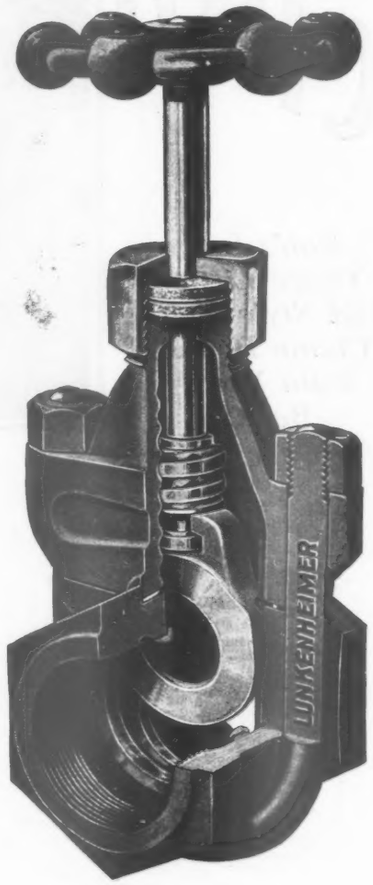
Trapsocket

Fort Worth, Texas Mexia, Texas

It's the Extra Measure of Service

rendered by Lunkenheimer "Clip" Gate Valves which has influenced thousands of valve users to standardize on these valves for their low pressure lines. And the number is being augmented daily by others who insist on getting the genuine

LUNKENHEIMER "Clip" GATE VALVES



Simplicity of design, sturdy construction, easy accessibility and renewability of all parts combine to make the "Clip" the ideal, economical valve for steam, oil, or water service, where pressure does not exceed 100 pounds at 450° F.

Withstand not only the pressure and temperature for which they are recommended, but also the stresses caused by expansion, contraction, vibration, weight and settling of the pipe, and other severe service conditions.

Iron Body Bronze Mounted Pattern is regularly furnished; but also procurable with lever for Quick-Operating purposes, and in the All-Iron Pattern for handling fluids which attack bronze but not iron.

Detailed information is contained in booklet 505; a copy will be sent without obligation.

Distributors, located in all commercial centers, carry Lunkenheimer Products in stock and render prompt service. Call on them for your requirements.

THE LUNKENHEIMER CO.

"QUALITY"

CINCINNATI, OHIO, U.S.A.

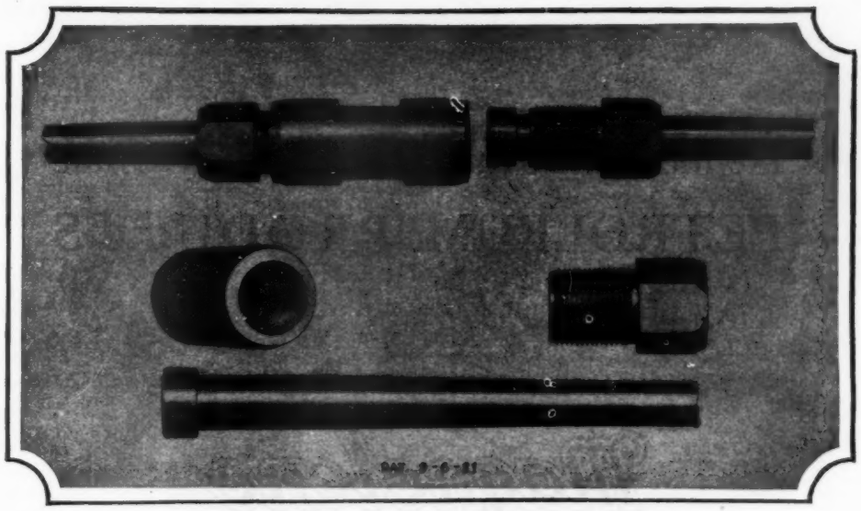
NEW YORK · CHICAGO · BOSTON · LONDON

EXPORT DEPT. 129-135 LAFAYETTE ST., NEW YORK

5-26-94

"BULLDOG" Sucker Rods

Are Safely Within The Limits of Forging!



Fully Heat Treated on both ends

[with pyrometer control]

No Threads on the rod itself

Giving the full strength of ALLOY STEEL---reducing fatigue and breakage to a minimum!

Write us for further information

The Columbus Sucker Rod Company

Columbus • • • • Ohio

"Columbus" SUCKER RODS

MAGNOLIA PETROLEUM COMPANY

Refiners and Marketers of High Grade
PETROLEUM PRODUCTS

Magnolene
REG. U.S. PAT. OFFICE

THE DEPENDABLE LUBRICANT

Lubricating Oils and Greases

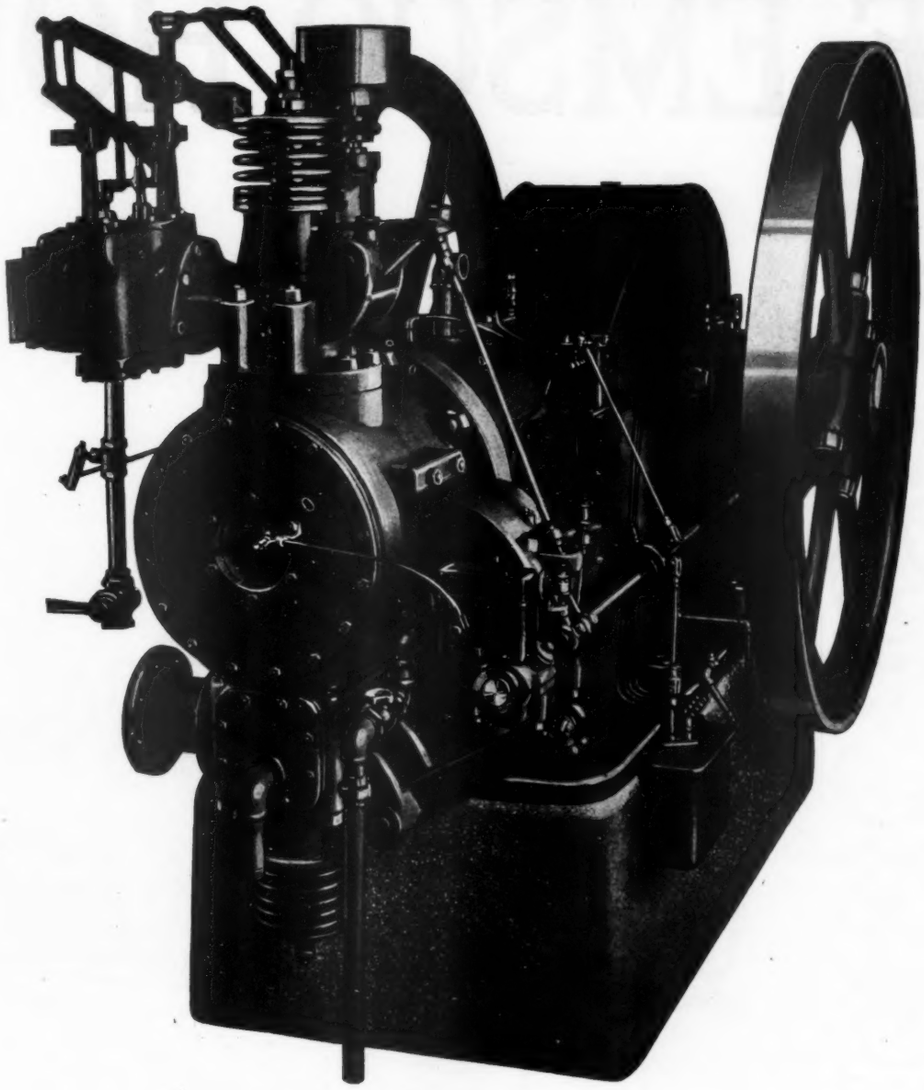
"A Grade for Each Condition"

GENERAL OFFICE

DALLAS, TEXAS

DIVISION SALES OFFICES:

DALLAS HOUSTON FORT WORTH SAN ANTONIO OKLAHOMA CITY LITTLE ROCK
EL PASO AMARILLO



Another Feature of the Reid 65 HP Four Cycle Gas Engine

The Cylinder and Bed Construction

The cylinder and bed construction of the new Reid 65 H.P. Four-Cycle Gas Engine is unique for an engine of this size. The combustion chamber is cast integral with the barrel of the cylinder and is water-jacketed on the closed end up to the bed flange. The barrel of the cylinder fits into the bed, which is designed to form a water jacket for the barrel. A rubber packing ring, held in place by a gland, forms a water-tight joint between the bed and the nose of the cylinder.

In addition to the ease and economy with which the barrel can be removed, this design has the further important advantage that no gaskets are required in the combustion chamber, thus eliminating the possibility of leakage and gasket trouble.

This is only one of the many features of the engine, others will be explained in subsequent advertisements. A complete description is given in our Bulletin No. 31. *We will be pleased to send you a copy.*

JOSEPH REID GAS ENGINE COMPANY, Oil City, Pennsylvania, U.S.A.

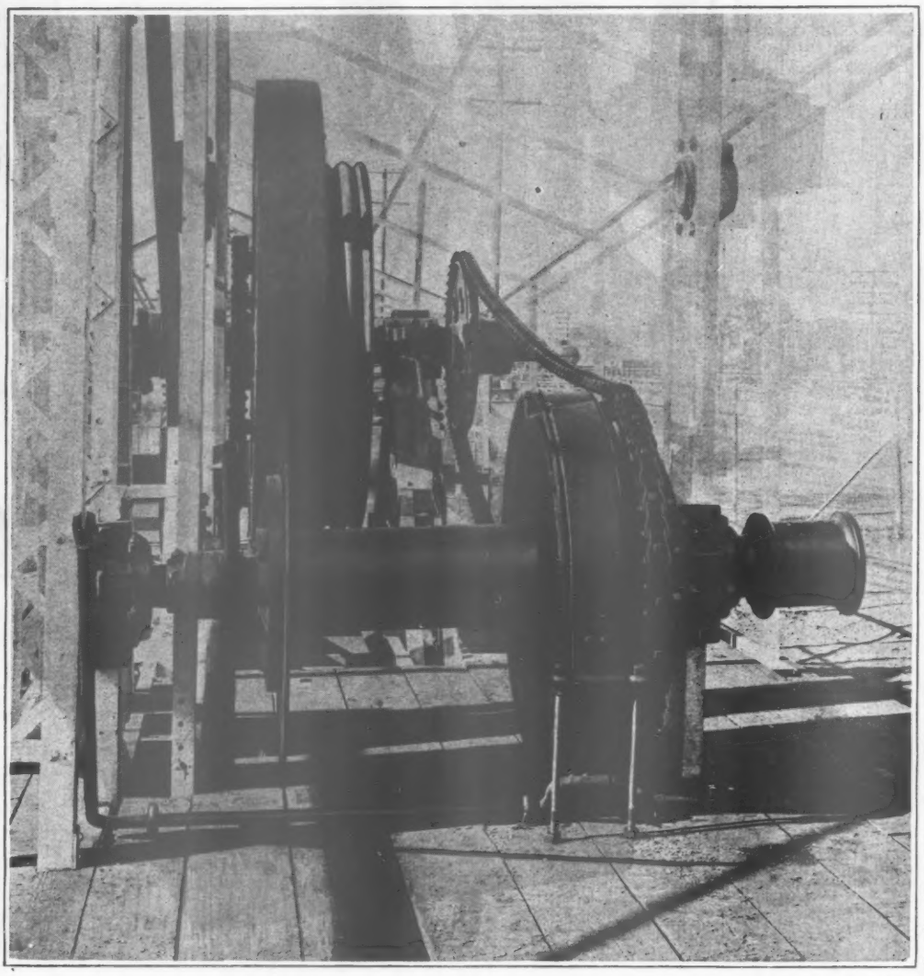
BRANCHES AND AGENCIES: Marietta, Ohio; Logan, Ohio; Newark, Ohio; Shreveport, La.; Charleston, W. Va.; R. B. Moore, Bolivar, N. Y.; Frick & Lindsay Co., Bradford, Penna., and Kentucky Distributors; S. R. Shoup, 708 Pacific Electric Bldg., Los Angeles, Cal. Frick-Reid Supply Company, Tulsa, Okla., and Branches, Distributors for Oklahoma, Kansas, Texas, Arkansas and Wyoming.

Export Sales Representative—Oil Field Equipment Co., Inc., 30 Church St., New York City

BRANCH SHOP, TULSA, OKLA.

THE EMSCO HOIST

EMSCO
A Complete Line of Better Oil Well Equipment



One of the greatest recent Improvements in oil field equipment

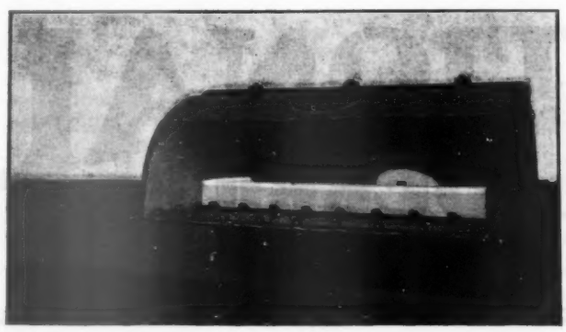
THE EMSCO HOIST

EMSCO
Derrick & Equipment Company
Los Angeles California
Houston Texas

Mid-Continent Petroleum Corporation plant at Tulsa, Okla.—equipped with Foamite Protection against fire.

Type "LB" Foamite Mixing Chamber (Vapor-proof)—equipped with a specially selected diaphragm which prevents the light vapors given off by oil in storage tanks from entering the chamber and pipe lines where they may condense and interfere with the prompt efficiency of the Foamite *System when fire breaks out.*

Below: Cut-away view showing interior of the new chamber, with diaphragm held firmly in place across the "mouth" by a steel ring and brass nuts. The large hand-hole at top of chamber, and the removable bottom, allow easy access for inspecting and painting the inside, and for replacing the diaphragm after a fire.



The New *Foamite* vapor-proof mixing chamber

Another real achievement in tank fire protection

To prevent the accumulation of vapor condensate in solution lines leading to the *Foamite* Mixing Chamber as well as in the Chamber itself, our engineers have developed a Vapor-proof Mixing Chamber.

A gas-tight diaphragm across the mouth blocks off the vapors from entering the chamber. The chamber itself is designed to withstand pressures above that necessary to burst the diaphragm. The control valves are operated in the usual way.

The diaphragm can be easily and quickly replaced without disturbing either the flashing or the bolts securing the chamber to the tank. A new bottom construction provides for ease of inspection and painting of the inside of the chamber.

In fundamental design, the *Foamite* Vapor-proof Series "B" Mixing Chambers are identical with those of the *Foamite* Series "A" Mixing Chambers which have proved their efficiency in hundreds of fire emergencies.

Oil-fire records continue to demonstrate the practical superiority of the *Foamite* method and Foamite-Childs engineering. They repeatedly prove the dependability of the foaming agent, Firefoam Liquid, to produce tough, durable Firefoam the moment it is required —whether through a standard *Foamite* System, or *Foamite* Portable Engines, or *Foamite* Hand Extinguishers.

We maintain service and sales stations at many points convenient to the oil-producing and refining centers. Our engineers will gladly furnish estimates on the protection your property requires.

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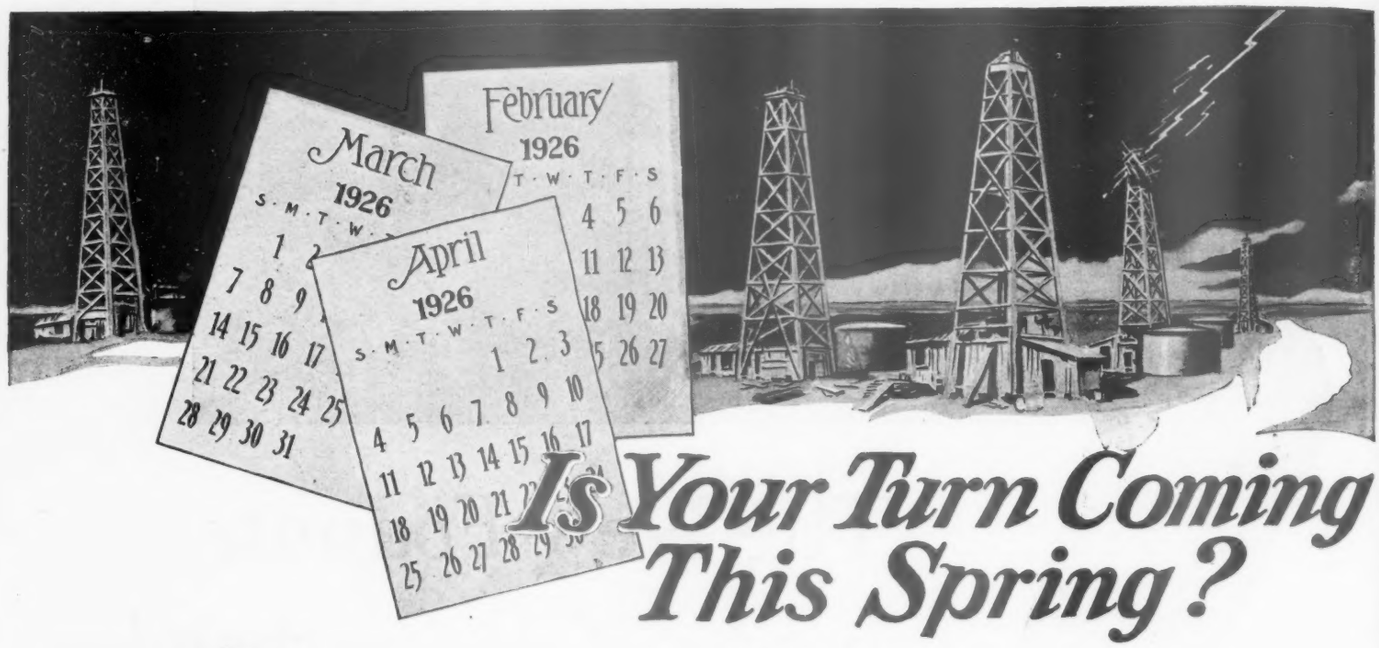
Foamite-Childs Protection

A Complete Engineering Service
Against Fire



Is Your Turn Coming This Spring?

February, March and April—are Storm Months in the oil fields! Last year and almost every year before—*raging winds* mowed down hundreds of wooden derricks; millions of dollars were lost in production and ruined equipment. Incessant rains caused rust and rot to old-fashioned equipment. White-hot lightning or other incendiary accident left trails of flaming torches where once were profitable wells.

"Taking chances" is an unavoidable part of every operator's business. Tempting Nature with wooden derricks (that seldom survive two or three stormy seasons) is, however, playing into the hands of "sure loss." Every Spring, the elements take their toll. Your turn will be next—"you're bound to lose"—unless you equip with International Galvanized Steel Equipment to overcome these hazards.

Why not protect your wells with the derricks that successfully defy high winds, destructive lightning, sparks and small fires, and years of wet weather. International "IDECO" Galvanized Steel Derricks are the ones you see over the hole and working when their wooden neighbors are blown flat or destroyed by flames.

Write the nearest "International" Derrick & Equipment Company Warehouse for sizes, prices, and deliveries.

The International Derrick & Equipment Co.

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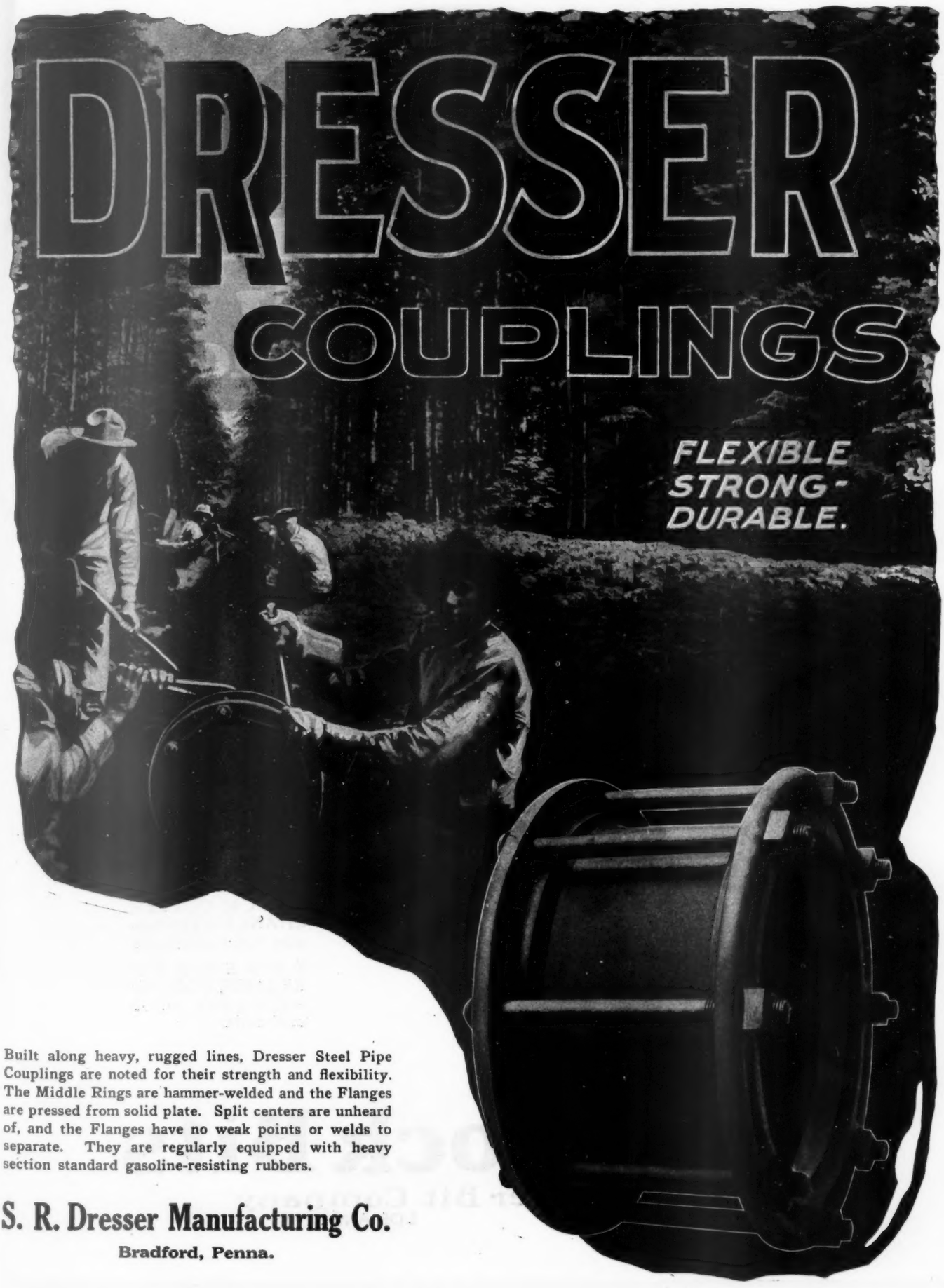
California National Supply Co.,—Distributors in California

The largest company devoted exclusively to the manufacture of steel (galvanized) equipment for the oil, gas and artesian industries.

INTERNATIONAL STEEL IDECO DERRICKS (GALVANIZED)

DRESSER COUPLINGS

FLEXIBLE
STRONG-
DURABLE.



Built along heavy, rugged lines, Dresser Steel Pipe Couplings are noted for their strength and flexibility. The Middle Rings are hammer-welded and the Flanges are pressed from solid plate. Split centers are unheard of, and the Flanges have no weak points or welds to separate. They are regularly equipped with heavy section standard gasoline-resisting rubbers.

S. R. Dresser Manufacturing Co.

Bradford, Penna.

What Makes The BIG Difference

SLUSH LUBRICATION—No mechanical lubricator to "monkey around" with.

QUICK CUTTER CHANGE—Ten minutes time—that's all.

THREADED REAMER COLLAR—Fits your fishtail drill collar.

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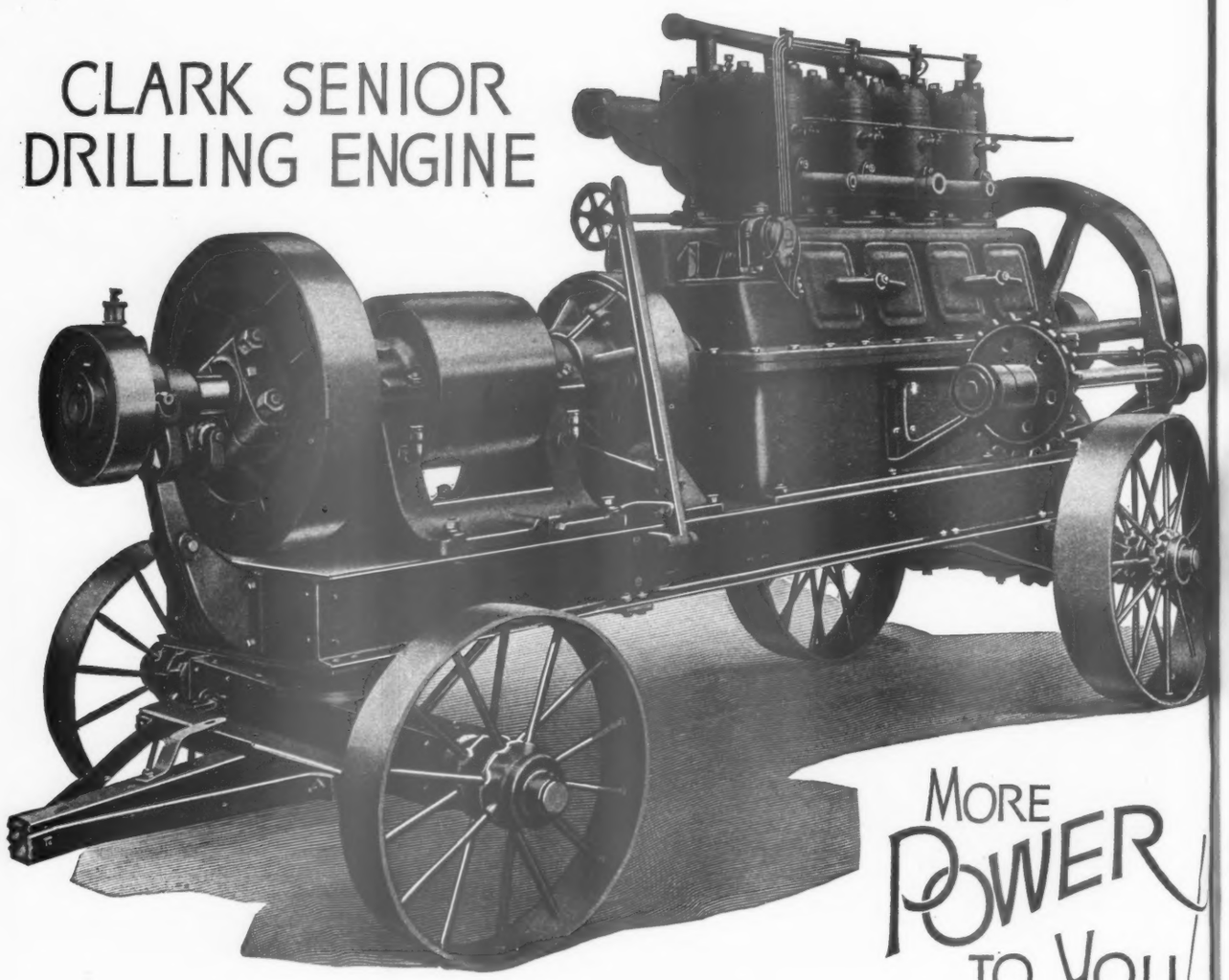
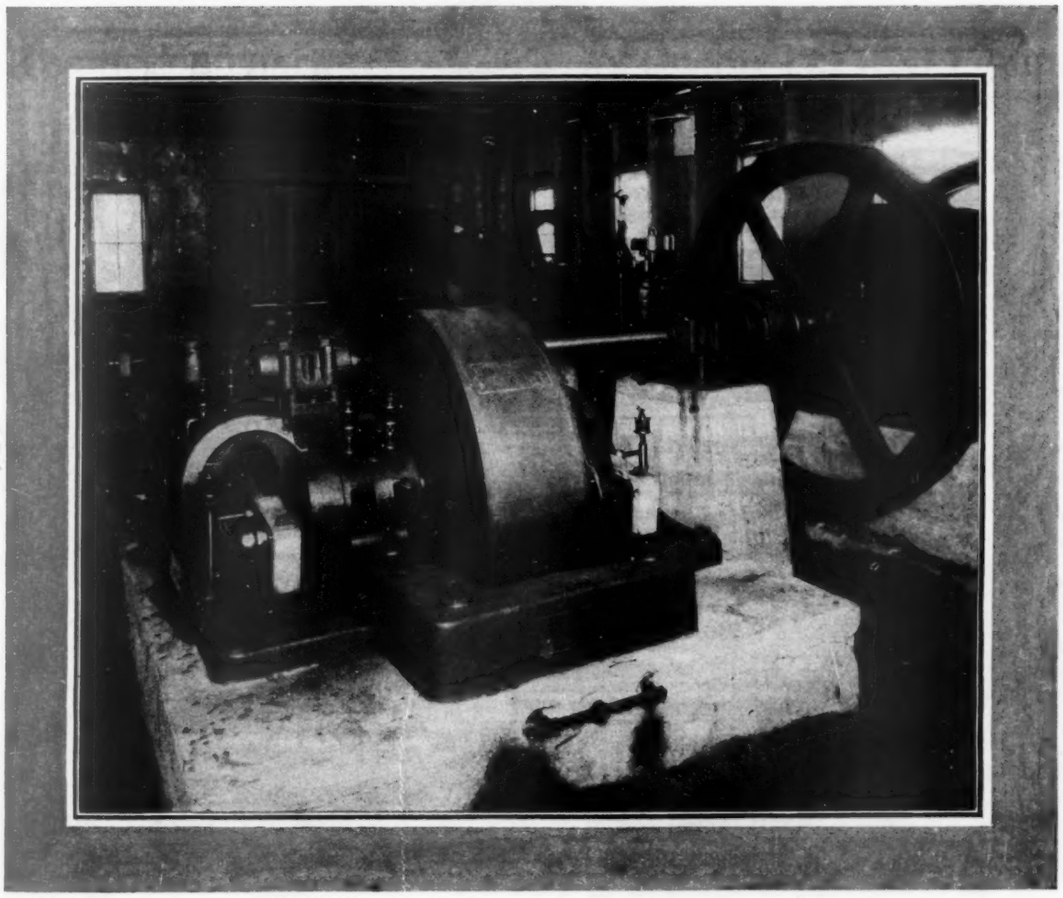


MORE POWER TO You!

CLARK GA



Two 5,000-barrel field pumps in the Magnolia Petroleum Company's station at Watchorn, Texas.

Built for reliable, non-stop service-and economy

PRESCOTT-Menominee high pressure pumps combine all the desirable features to meet the special needs of the severest field pumping conditions. We have designed these pumps with a full knowledge of the conditions to be met, and they are built to take hard service and stand up to continuous month-after-month running. Yet, with all their exceptional ability, Prescott field pumps are economical. Economy of operation and maintenance have not been sacrificed in securing high operating pressures and great capacity.

The leaders in the big fields use Prescott-Menominee pumps, both for field service and for high-pressure main line pumping. Performance records on the many Prescott pumps now in service are the best reasons why you should use them, too. Send for data on Prescott pumps now. *Complete stock of field pumps ready for shipment at Tulsa.*

The Prescott Company
Menominee, Michigan
Fred. M. Prescott, President

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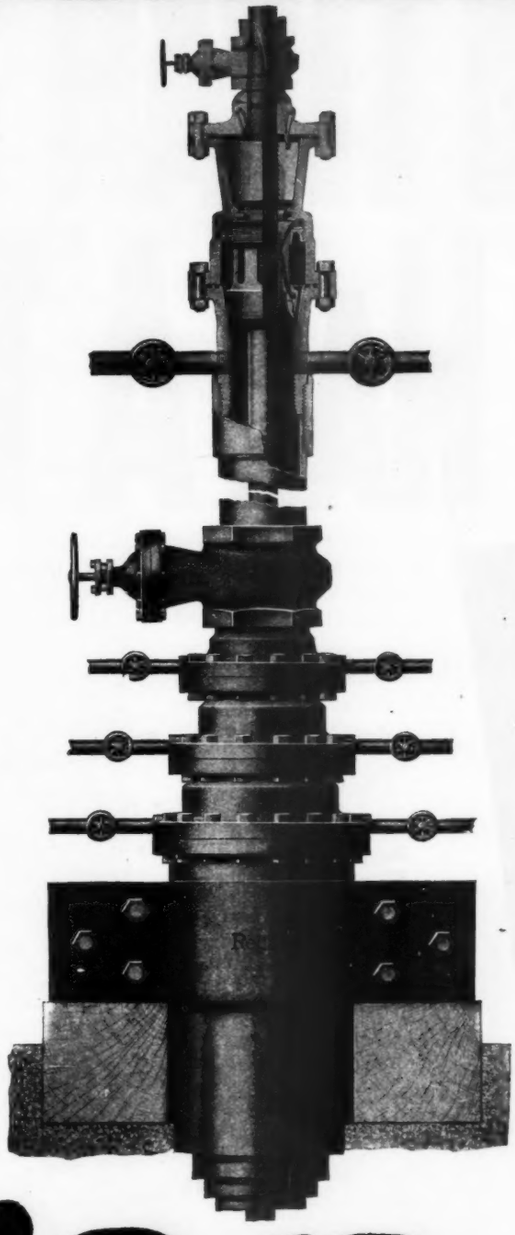
No More Blowouts!

—With Your Well Equipped With Regan Oil Saver and Casing Control Head



The illustration shows a typical hook-up of the Regan Control Head with various sizes of casing tied and the Regan Oil Saver, which is also a Blowout Preventer. Many operators install a valve between the Control Head and Oil Saver for closing when the tubing is removed.

The Regan Oil Saver and Blowout Preventer is highly recommended for use in running in tubing against gas pressure. The unique seal caused by the rubber packer prevents any splashing or leakage of the oil around the tubing. The Oil Saver is ordinarily mounted on a Regan Tubing Head and is equipped with an upper flange which allows quick installation of the Regular Tubing Head flange, which enables the operator to couple the Christmas Tree hook-up without the removal of the Oil Saver, when desired.

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NO TIVAN BIT HAS EVER HAD A "TWIST OFF"!

McCUNE-MORRISON
Drilling Contractors
Tulsa, Oklahoma

The Titusville Forge Co.,
Titusville, Pa.

March 3d, 1926

Gentlemen: Att. Mr. O. O. Adkins, Rep.

In reference to your inquiry as to the service we are getting out of the TIVAN fish tail bits bought from time to time through the Continental Supply Co.

We are using these bits exclusively, and are more than pleased with the service we are getting. It has been the experience of the writer to find it necessary to buy eight or ten new bits on each well, but we have not found this necessary with the TIVAN. We can truly say that it is hard to miss the steel gone from these bits on one well on either of our rigs, and as you know the conditions in and around Stroud, Okla., such performance as just stated is quite a recommendation for a Fish Tail Bit. We are convinced that we are making more hole per dressing than with any bit we have ever used, and have not had a single break of any nature.

Thanking you for your interest in following up your material and trusting that all TIVAN users are as well pleased as ourselves,

We are yours for Business,

McCune - Morrison

By Eldridge B. Gill
Drilling Sup.

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TIVAN ALLOY FISHTAIL BITS

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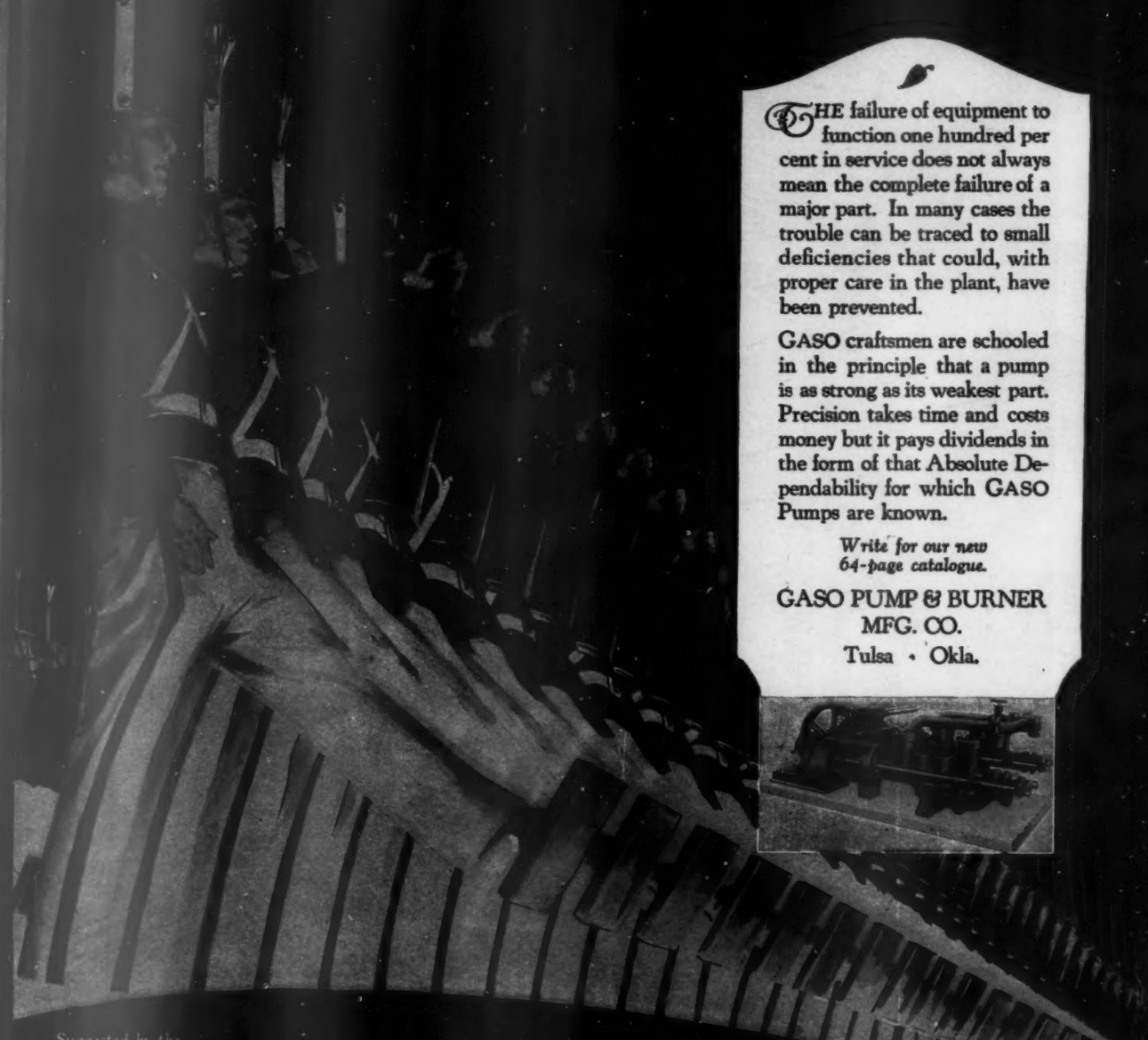

Suggested by the "Wooden Soldier" scene in Ziegfeld Follies

THE failure of equipment to function one hundred per cent in service does not always mean the complete failure of a major part. In many cases the trouble can be traced to small deficiencies that could, with proper care in the plant, have been prevented.

GASO craftsmen are schooled in the principle that a pump is as strong as its weakest part. Precision takes time and costs money but it pays dividends in the form of that Absolute Dependability for which GASO Pumps are known.

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MAP OF NORTHEASTERN OKLAHOMA. ~ SUBSURFACE

A—Arbuckle limestone. B—Burgen sandstone. T—T

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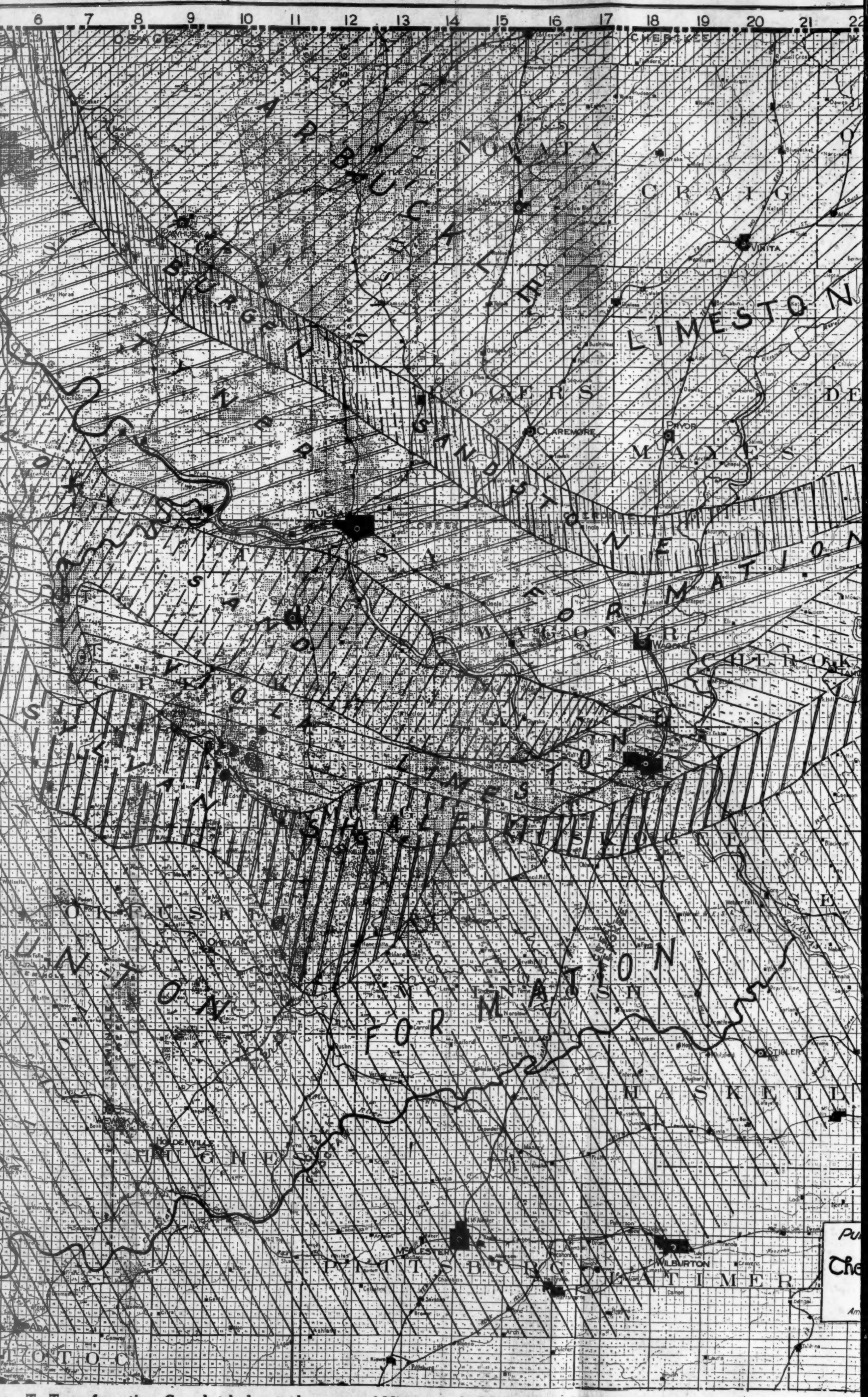
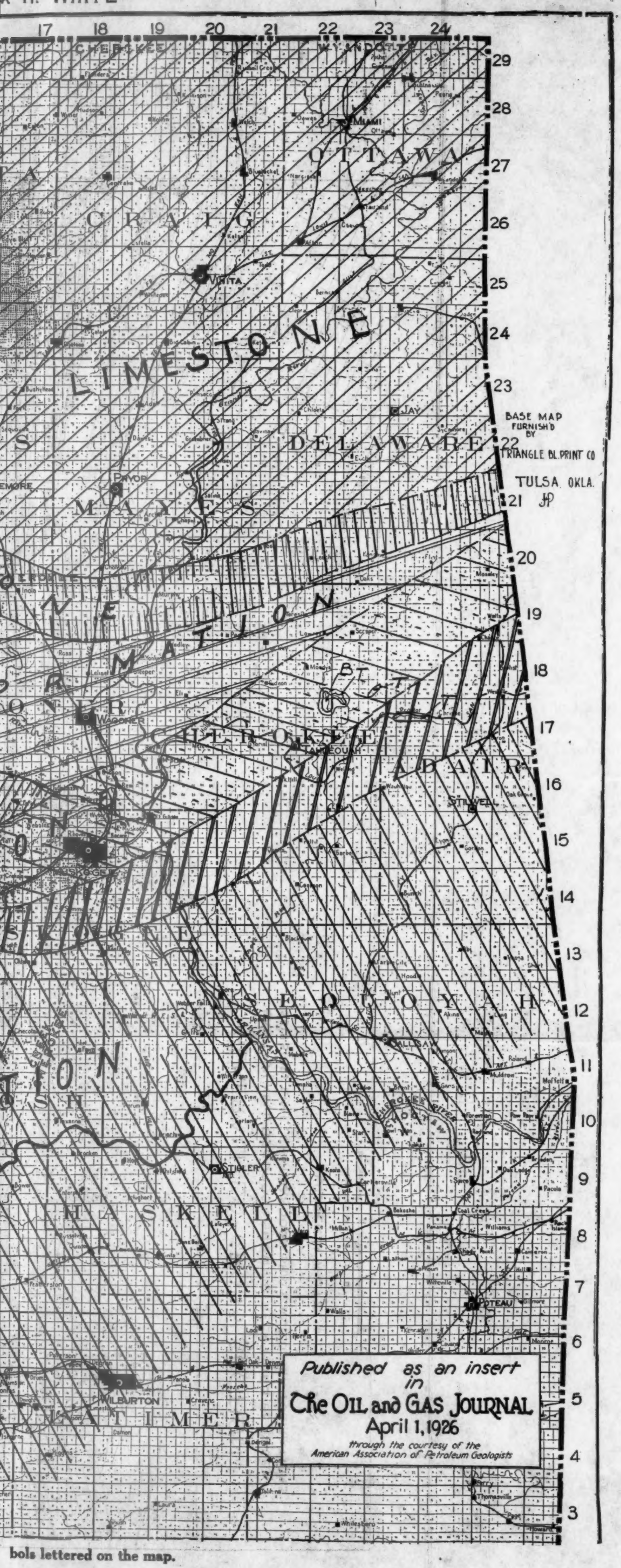


ne. T—Tyner formation. Cross-hatched spots show areas of Misener sand. Other sym bols lettered on the map.

RFACE DISTRIBUTION OF PRE-CHATTANOOGA ROCKS BY LUTHER H. WH

ndstone. T—Tyner formation. Cross-hatched spots show areas of Misener sand. Other sym bols let

R H. WHITE



bols lettered on the map.

GENERALIZED CROSS SECTION

BASED ON WELL RECORDS SHOWING RELATIONS BETWEEN MISSISSIPPI LIME, CHATTANOOGA SHALE AND OLDER FORMATIONS

BY

LUTHER H. WHITE

HORIZONTAL SCALE IN MILES

UNIV. OF WYOM.

OF PARTICULAR VALUE TO THE OPERATOR AND NON-GEOLOGIST

The oil producing horizons below the Mississippi lime have been sought by hundreds of test wells in Oklahoma during the past few years and the search for the elusive so-called "Wilcox" sand series is constantly increasing. In some parts of the State many tests which were supposed to go to the "Wilcox" have been plugged and abandoned because they found water in what the driller

OF PARTICULAR VALUE TO THE OPERATOR AND NON-GEOLOGIST

The oil producing horizons below the Mississippi lime have been sought by hundreds of test wells in Oklahoma during the past few years and the search for the elusive so-called "Wilcox" sand series is constantly increasing. In some parts of the State many tests which were supposed to go to the "Wilcox" have been plugged and abandoned because they found water in what the driller thought to be the "Wilcox" sand but which later scientific investigation has shown to be a formation above the objective horizon. These tests, therefore, were not conclusive, and the economic losses which have resulted from ignorance of the stratigraphy, or succession of formations, below the Chattanooga black shale have amounted to hundreds of thousands, probably millions, of dollars.

The article in this issue of The Oil and Gas Journal by Luther H. White, cross-section and map comprise one of the most important contributions ever made toward the solution of this problem, and should be of direct value in dollars and cents to all operators and non-geologists interested in this great area, as well as to the technical man.

WHAT THE MAP SHOWS

The map on the reverse side of this sheet shows in detail the areas where the various formations below the Chattanooga black shale are found in contact with that reliable marker. In other words, a well drilled in the vicinity of Sapulpa would pass from the Chattanooga into the Wilcox sand, while in the vicinity of Okmulgee the drill finds the Sylvan shale directly beneath the Chattanooga shale and must pass through the Sylvan, the Viola limestone (white lime or "buttermilk" lime) before reaching the Wilcox sand. Farther south, around Okemah, the map shows that the Hunton lime lies directly beneath the Chattanooga and the Hunton is separated from the Wilcox by the Sylvan shale and Viola lime.

This map may be considered in one way as an areal geologic map with all upper formations including the Mississippi lime and the Chattanooga shale scraped off,

This map may be considered in one way as an areal geologic map with all upper formations including the Mississippi lime and the Chattanooga shale scraped off, leaving the base of the Chattanooga exposed as a surface. Then the various formations would outcrop in the areas shaded by different symbols.

The map is of special value to the operator since it is sectionized and enables him to tell at a glance just what formation to expect after he drills through the Chattanooga shale. Having identified that formation, the accompanying cross-section shows him the other strata to expect in their order.

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